

BIBLIOGRAPHICAL NOTICES.

ART. XI. *Beiträge zur genaueren Kenntniss und Unterscheidung der Kehlkopf- und Lufttröhren Schwindsuchten.* Von WILHELM SACHSE, Grossherzoglich Mecklenburg-Schwerinschem Leibarzte und Medicinal-Rathe. Mit Kupfern, Hannover, 1821.

Considerations relative to the Diagnosis of Laryngeal and Tracheal Phthisis. By WILLIAM SACHSE, &c.

"Hinc morbi exempla raro prescripta leguntur illiusque naturam accuratius indagare medicorum eo majis erit officium, quo plures hoc morbo miserrime perisse constat," are the observations of the celebrated Thomann, (Annale, Tom. I. p. 165,) relative to the disease which has given origin to the work, the title of which we have just announced. If then this is the importance of the subject, we hope we may be excused in calling the attention of our readers to the efforts made by Dr. Sachse, to establish the diagnosis between laryngeal and tracheal phthisis. These diseases have, doubtless, constituted at all periods of the world, part of the afflictions to which mankind are subject, yet notwithstanding the numerous treatises on consumption, but little attention has been directed to the form of the disease with which we are at present concerned. It is true that we find, even at an early period, occasional references made to this affection of the larynx and trachea, yet it is only in modern times that any very successful efforts have been made to elucidate its pathology. Amongst these attempts, that of Dr. Sachse should be particularly noticed, as it contains a more full and comprehensive exposition of the general characters and diagnosis of the disease, than any treatise on the subject with which we are acquainted.

The author treats first, of the general characters of laryngeal phthisis; second, of tracheal phthisis; and third, of the diagnosis of these two affections, as well as the difference between them and pulmonary consumption, and some other maladies with which they are liable to be confounded.

I. LARYNGEAL PHTHISIS.

Young subjects are by no means so liable to this affection as the middle aged; the period comprised between the thirtieth and fiftieth year, being that which is most obnoxious to it. In a case observed by Percival, it took place as late even as the sixty-third year. The author thinks that the inflammation of the larynx seldom reaches the ulcerative point in children, because in consequence of the greater susceptibility of their constitutions, the patient is destroyed long before the disease reaches that point. In this sentiment, however, we cannot entirely concur, since numerous cases have occurred, in which ulcers of considerable extent have been found in the larynx of children who had died of chronic croup. This latter affection may, indeed, be considered as one of the predisposing causes of this form of consumption, as must also the angina maligna, which has been observed by Huxham, when long-continued, to terminate in consumption. Amongst the causes of laryngeal phthisis, must also be enume-

rated the scrofulous and venereal virus, the influence of sex, &c. I. Frank, who had frequent opportunities of witnessing the disease, as well at Vienna, as at Wilna, considered it as peculiar to the male. The observations, however, of Thomann, Albers, P. Frank, Horne, Sachse, and others, prove that it also attacks females. It is stated by the author that—

“It generally selects those who possess a very sensible skin, who are liable to erysipelatosus and herpetic eruptions, and to superficial ulcerations about the neck.”

“More or less hoarseness is usually the first symptom of the disease. It is generally considered, however, as merely the consequence of a common cold, and is consequently neglected; a conclusion in which the individual is often confirmed by the circumstance that the catarrhal symptoms are often relieved, or aggravated by the changes of weather. In a short time the patient complains of a slight uneasiness about the throat, which soon becomes changed into considerable pain, at first shifting, but afterwards fixed. This circumstance will at once prove that the case is not one of common catarrh.

“At an early period, there is an inconsiderable cough of the ordinary catarrhal character, which, however, as the pain increases, becomes more violent, shrill, sonorous, or even stridulous, as in croup: every attempt to take food or drink, especially a sudden effort to swallow fluids, exposure to the slightest smoke or exhalation, or a current of air, or even an inspiration of cold air, exposes the patient to a kind of spasmodic cough.

“There is at first no expectoration, or it consists merely of a frothy mucus, streaked with blood. Sooner or later, according to the progress of the malady, it becomes consistent, puriform, very offensive, and of a grayish-yellow colour. It is, nevertheless, small in quantity, and is generally brought up with much effort, especially in the morning. During the greater part of the day, it remains frothy, and is at times mixed with a considerable quantity of saliva, in which the particles of pus sink to the bottom of the vessel. In some cases, fragments of pseudo-membrane are brought up by a considerable effort, portions of cartilage; and it has been alleged that even one of the entire cartilages of the larynx has been discharged, having been detached by ulceration.

“At an advanced stage of the disease, the breath of the patient acquires an offensive odour, which, as the malady advances, becomes so insupportable, as to compel those who are exposed to it, to turn away their faces involuntarily. The respiration is generally free, and the motions of the chest for the most part unrestrained, yet the respiratory effort is occasionally interrupted. The patient feels as though the closure of the larynx interrupts the ingress of air; and this condition gives rise at first to a slight croupal wheezing, which, at a subsequent period becomes stronger and more sonorous.

“The voice is always hoarse, and finally becomes so feeble that it is with difficulty the patient can be understood. Indeed, in the morning, it is sometimes entirely extinct, and is only regained after the use of some warm drink. The pain is usually referred by the patient to some particular part of the larynx, being seldom diffused throughout the whole extent of that tube, but sometimes extending to the trachea or the root of the tongue, and keeping up a constant burning sensation in the throat; the pain is generally worst at night, and is increased by pressure, by every attempt to swallow; and by the cough. It is also exasperated by any sudden motion of the head, or by the act of speaking.

“As the disease progresses, deglutition becomes exceedingly difficult, so that finally the patient can scarcely swallow fluids, and is obliged to use such articles of diet as possess more consistence. Whenever he attempts to drink, a drop of water, by falling into the larynx, occasions such a violent spasmodic action of the parts, as to return the fluid by the mouth and nose. In attempting to swallow solids, small particles of the mass sometimes become lodged upon the painful part, and occasion great suffering. This accident is the more

distressing, as it occasions a great sense of dryness about the throat, which creates a desire for drinks that cannot be gratified, on account of the reasons already mentioned.

"In some cases, a manifest swelling of the throat exists externally, which either corresponds to the whole extent of the larynx, or is confined to a small extent of that organ. This tumefaction extends, moreover, in some instances, to the adjacent glands of the neck.

"In the mouth, appearances are observed which have been hitherto overlooked, which nevertheless are important to be attended to, notwithstanding they do not exist in every case. The tongue, on the side corresponding to the seat of the pain, is covered from base to tip, with a thick, yellowish incrustation, which is accurately defined by the median line of the organ, beyond which it does not extend. The other half of the tongue maintains its natural red colour. The incrustation is generally yellowish posteriorly, but of a light colour, near the tip of the organ. The root of the tongue, moreover, frequently undergoes considerable alterations in the last stage of the disease: it becomes thicker, of a redder colour; its papillæ become prominent, and are smeared over with a whitish mucus, as though they were in a state of suppuration.

"At the commencement of the disease, there is sometimes no fever, or it is very slight, and comes on towards evening, with frequent, small pulse, and alternate chills and heat. The paroxysm does not last long, but soon declines, leaving the patient bathed with a profuse perspiration, which occasions a rapid wasting of the body. The influence of the disease upon the muscles of the larynx, tends to exalt their irritability to such a degree as to excite a spasmodic closure of the glottis, and thereby interrupt the entrance of the air into the lungs. Under these circumstances, the "*pabulum vitæ*" can no longer reach the vascular net-work which is expanded upon the air cells, and consequently, the bodily powers become so debilitated, the nervous energy so enfeebled, that the patient does not usually subsist long enough to be consumed by colliquative diarrhœa, but falls a victim to apoplexy or an anginous affection, or he dies in consequence of the nervous energy of the air tubes being so far overcome as to destroy altogether the relations between them and the muscles of respiration."

Such are the symptoms of this formidable malady, which, when it once fixes upon the system, suffers but few to recover from its ravages. Like consumption of the lungs, it is almost always fatal, recoveries being exceedingly rare, and seldom taking place in many cases, except those which owe their origin to the venereal virus.

Our author has been at considerable labour in selecting examples of laryngeal phthisis, a great number of which he has detailed with great care and precision. Examinations after death always revealed considerable alteration of texture about the larynx, which corresponded, in most cases, with the point in which the pain was located during the life of the patient. These consisted, for the most part, of inflammation, with extensive ulceration of the mucous membrane of the larynx, as well as of the cartilages, glands, muscles, and ligaments—the development of fungous excrescences, a general thickening of the parts, and a complete annihilation of their natural characters. Several of these alterations are represented in the plates which are annexed to the volume.

II. PHTHISIS TRACHEALIS.

After the description of the disease of the larynx, the symptoms of which have been detailed, our author enters into the consideration of the second form of the disease, called tracheal phthisis.

This malady generally attacks those of middle age:—"Galen observed it in

a young physician; Thomann in a female aged 29; Kraus in a woman of 36; Cayol met with it in one individual of 30, and in another of 49; Bayle mentions one of 39; Corvisart one of 40; Badham one of 47; Fouquier one of 50, and Morgagni one of 80 years. It is characterized by hoarseness, pain in the trachea, cough, expectoration, difficult respiration, and hectic fever: a part of which symptoms are also common to it and laryngeal phthisis." These two affections nevertheless, our author thinks, may be distinguished from each other, notwithstanding the opinion of Thomann to the contrary.

The most frequent cause of tracheal phthisis is, unquestionably, exposure to cold; a fact long since pointed out by Morgagni, who observes, that draughts of cold water, taken when the body is heated, produce consumption, not only by acting upon the lungs, but also upon the vessels of the trachea; it may also arise from suppuration of the adjacent glands, from blows, contusions, wounds, or even external pressure.

The voice is at first slightly hoarse; some patients complain of an indescribable sensation about the lower part of the trachea, which seems to affect the clearness of the voice, and which they endeavour to remove by hawking, or by an effort to cough. The natural timbre of the voice is, indeed, in almost every case, lost: it becomes rough, or hoarse, but seldom so much enfeebled as in the laryngeal phthisis. A distressing cough soon makes its appearance, which is increased during a meal, or by exercise. The expectoration is, at first, scanty, thin, and transparent: at a later period it becomes filiform, variegated with a yellowish puriform substance; and, more rarely, it is streaked with blood. In some instances it retains this character for a length of time, but gradually becomes, in the end, of an opaque, yellow colour, offensive to the smell and taste, and of a genuine purulent character, generally intermixed, however, with more or less of a frothy, transparent mucus; occasionally, when the disease has existed for a length of time, portions of the cartilaginous rings of the trachea and bronchia are brought up by a violent fit of coughing. This appears to have been noticed by Aretæus, inasmuch as he says, (page 86,) "*asperia arteriæ circuli nonnunquam expuuntur ob ulceris varietatem, si abscessus alte penetrat. Rauescunt, breve spirant, gravem vocem edunt, &c.*"

The uneasy sensation in the throat, which tends to provoke the cough, is by that act converted into pain, which is not, however, confined to a point, but seems to be seated in the lower part of the trachea, on a level with the upper part of the sternum. When the cough is severe, the patient often places his hand, involuntarily, upon this region; and when there is no cough, he occasionally complains of a sensation which he compares to the act of pressing from within outwards. This feeling sometimes extends deeper into the chest, behind the sternum, but always inclined slightly to the left side. At first it is of transient duration; but is always increased towards evening, and interrupts the functions of the bronchia, the lungs alone preserving their freedom of action.

"The respiration is generally exceedingly difficult, so much so, indeed, that every two, three, or four days, the patient becomes affected with a sense of suffocation, which continues from a quarter, to two or three hours; even in the interval of these attacks, the breathing remains difficult, and is frequently accompanied with a kind of rattling, or wheezing. The rattle is particularly strong during the fit, and for some time before it comes on. When the patient attempts to speak, it is particularly observable at the end of each sentence, and seems

to be owing to the presence of the mucus which occasions an obstruction in the trachea. Every bodily effort disposes to these effects of dyspnœa.

"The tongue is covered with a thick, yellowish incrustation; but the patient has generally a good appetite, and is not much emaciated. The deglutition is difficult, without there being any apparent inflammation of the throat. The patient does not experience any difficulty in engaging the morsel in the pharynx, but experiences pain when it passes the region in which the inflammation of the trachea exists.

"In most cases the patient dies before a well-marked hectic becomes established: instead of this, he experiences restless nights, a burning sensation in the palms of the hands, dryness of the skin; but all these symptoms are not so strongly marked as in other forms of consumption. The pulse is quick and febrile, but generally regular; it is sometimes different in the right and left arm. Towards the end of the disease there is often considerable swelling of the feet, a dark, red suffusion of the countenance, with a disposition to syncope. The patient can lie, with equal ease, on either side, but cannot rest easily upon his back. During the paroxysm of dyspnœa he is often compelled to set erect, with his head thrown forwards upon his breast until the difficulty of breathing passes away. For some time before death the paroxysms are less violent, and do not recur so frequently. In some cases death takes place suddenly, while the patient is in the act of changing his position, by which the matter, which had become collected in an abscess, finds its exit, and occasions suffocation. The patient dies of all the accidents of consumption."

These are the characters which, according to our author, characterize tracheal phthisis; an affection which, as well as that described above, has been, until within a few years, too much confounded with phthisis pulmonalis. It is divided, by him, into three varieties, according to the nature of its origin:—

1. "Primitive tracheal phthisis; or that which arises from the development of the suppurative process in the lining membrane of the trachea.
2. "Secondary tracheal phthisis; or that which is owing to abscess, induration of the glands, or to cysts developed in any part of the trachea, or its vicinity.
3. "Complicated tracheal phthisis, when it arises from ulceration of the throat."

It will be seen, from this division, that the disease may originate from several causes, of which some are intrinsic, while others possess an extrinsic character. But as regards ultimate results, this does not seem to be of much consequence, inasmuch as all the researches of our author lead to the melancholy conclusion, that the disease is very generally fatal under any concurrence of circumstances.

The anatomical characters of tracheal phthisis vary according to the nature of its cause. In most cases, however, the mucous membrane of that tube is found in a state of suppuration or ulceration; these conditions being either diffused or circumscribed, and confined to the membrane itself, or extended to the adjacent structures; as the cellular tissue, glands, cartilages, &c. We have already seen, that in some instances portions of the cartilaginous rings of the trachea are ejected with the expectoration; and it is by no means unusual, when the disease has been of long standing, to find them softened, eroded, and variously altered from their natural condition.

But we have yet to examine the most important part of the work before us; or that which relates to the diagnosis of the two affections which have been described. The author has treated this subject somewhat minutely, and has detailed, with considerable care, the several phenomena which serve to charac-

terize the two diseases. The principal affections with which they are liable to be confounded, are, according to our author, thickening of the mucous membrane of the larynx, phthisis pulmonalis, aneurism of the aorta, caries of the os hyoides, and suppurative within the articulation of the atlas, with the dentatus. The diagnosis of each of these he considers separately; and we shall endeavour to follow him through his remarks.

I. DIAGNOSIS BETWEEN LARYNGEAL AND TRACHEAL PHTHISIS.

It has been affirmed by Double, who has written an excellent memoir upon the subject, that the two affections cannot be distinguished from each other. Sauvé and Cayol have attempted to point out some distinguishing characters, founded, mostly, upon the alteration of the voice and the seat of the pain. We think our author has been more successful in his attempt.

§ 1. *Alterations of Voice and Speech.*

PHTHISIS LARYNGEAL.

1. "The voice is hoarse from the commencement, and this condition increases as the disease advances; it becomes weak, scarcely audible, and finally extinct.

2. "The patient cannot speak for any length of time in a loud voice, but whenever he attempts it his voice gradually fails, and a tickling sensation about the larynx takes place, which occasions a spasmodic action of the muscles of that tube, and excites more or less contortion of the face, a disposition to sneeze, or interrupted respiration.

3. "The first words which the patient attempts to speak in the morning are articulated with difficulty."

PHTHISIS TRACHEALIS.

1. "The voice is but slightly, or not at all altered. The patient, more than the bystanders, is sensible of a diminution of the sharpness of its tones, and endeavours, by frequent hawking or coughing, to overcome the sense of obstruction, which he feels about the upper part of the sternum.

2. "The speech is rather accompanied with a kind of hoarseness, which, with some individuals, continues throughout their entire lives, and is as well marked as that which is observed in hard drinkers.

3. "The articulation is the same throughout the day. It can only be altered by pressure upon the trachea or a change of position."

From this, it clearly appears, that the alteration of the voice is much greater in laryngeal than in tracheal phthisis, and that that circumstance furnishes one important means of distinguishing these two affections.

§ 2. *Pain.*

LARYNGEAL PHTHISIS.

"*a. Seat.* The upper part of the larynx, to which the patient applies his hand involuntarily, when the pain is considerable. It sometimes extends beyond this point, reaching the fauces, even when their natural aspect is unchanged, but seldom extending much downwards.

TRACHEAL PHTHISIS.

"*a. Seat.* Low down in the trachea, about the level of the bifurcation, seldom extending much upwards, but frequently reaching the bronchia, and manifesting itself behind the sternum. It seldom takes place in any other part of the chest, and then only when the diseased bronchia irritate the lungs by mechanical pressure.

"*b. Nature.* At first tickling, but afterwards acute and continuous, pricking, lancinating, or similar to the impression which would be made by penetrating the larynx with any foreign body.

"*c. Changes.* Aggravated by the cough,

"By external pressure,

"By an impure atmosphere, or one intermixed with irritating substances,

"By boisterous weather,

"By heating remedies,

"By speaking, riding, swallowing, and accidental inflammation,

"By gargling with mustard or vinegar,

"By breathing with the mouth open during sleep.

"*Diminished.* by emollient vapours.

"*Duration.* Generally continuous.

"*b. Nature.* The pain at first is of the pressing kind, as though something was pressing from within outwards against the sternum. At a later period, when the cartilages become loosened, or when the disease proceeds from extrinsic causes, it becomes acute and lancinating.

"*c. Changes.* Aggravated by cough.

"By external pressure in an inferior degree.

"But little affected by an impure atmosphere,

"Or by boisterous weather,

"Or heating remedies,

"By rotating the head upon the neck.

"Not affected by stimulating gargles,

"Nor by sleeping with the mouth extended.

"It is not diminished by emollient vapours.

"Undergoes considerable remissions."

§ 3. Cough.

1. "Each fit of coughing is preceded by a sense of tickling about the larynx. This is followed by a dry cough, which is frequently neglected.

2. "It is excited by irritating gargles, by a damp, impure atmosphere, and by the use of acids. It is not excited by exercise, when the precaution is used to hold a handkerchief before the mouth.

3. "In most cases, it is violent in the morning, until something is brought up by expectoration. It is also troublesome throughout the greater part of the day, taking place in form of short, spasmodic succussions. It can be removed by pressure upon the larynx, but a sneezing takes its place; the cough again returning when the pressure is removed.

4. "It is sonorous, and shrill, especially, during an inspiration. During an expiration, it is wheezing, as though the patient breathed through a contracted larynx; or it is somewhat croupal.

1. "It is not preceded by any tickling, but an effort to expectorate is succeeded by a dry cough, coming on in paroxysms, accompanied with great bodily exertion, and a sense of suffocation.

2. "It is not excited by the first set of causes, but so readily by the last, that towards the conclusion of the disease, the patient is unable to take any exercise.

3. "There is a slight teasing cough throughout the day, and at night it is so troublesome, as to deprive the patient of all repose.

4. "It is not sonorous, but is deeper, more hollow, hoarser, and more rattling, than the cough in bronchitis, and is unattended with wheezing.

5. "In some cases, it comes on in strong paroxysms, which are brought on by the influence of external causes; much speaking, swallowing with precipitation, the presence of inflammation, the detachment of fragments of false membrane, or of pieces of cartilage.

6. "The cough is excited by the act of swallowing, and the food is thrown back in the incipient stage of the process.

7. "During the cough, the patient seizes the larynx.

8. "Whatever is brought up by expectoration, is without much effort, or with but little commotion of the chest.

9. "The cough is easier at night, but is increased after rising in the morning. In the last stage of the disease, it becomes so troublesome as to deprive the patient of all repose, and can only be quieted by large doses of opium."

5. "The cough is suffocating, interrupted, and attended with great succussion and pain in the chest.

6. "As the aliment approaches the chest, the rapid and incautious manner in which the individual attempts to swallow, tends to excite the cough, and the process is completed with more circumspection.

7. "He applies his hand to the lower part of the neck; to the seat of the pain.

8. "Expectoration brings great relief, and is only accomplished by considerable effort.

9. "Aggravated whenever the patient lies down."

§ 4. *Expectoration.*

In both diseases the cough is at first dry, but at a subsequent period, the expectoration becomes considerable, in consequence of the implication of the mucous follicles, and the ulceration of the mucous membrane.

PHTHISIS LARYNGEA.

1. "The quantity of the fluid expectorated is inconsiderable when compared to the extent of the general sufferings.

2. "Sometimes it is bloody, but seldom presents that character.

3. "Sometimes it is mixed with small fragments of pseudo-membrane.

4. Portions of cartilage are sometimes brought up, which seem to consist of some of those of the larynx, ulcerated and thickened. (See Morgagni, Hunter, Double, Sedillot.)

PHTHISIS TRACHEALIS.

1. "The expectoration is much more considerable; partly, in consequence of the greater formation of purulent matter, and, partly, from its admixture with the mucous secretion.

2. "It is more fluid and mucous, sometimes intermixed with small fragments, which sink to the bottom. When the glands are affected, it is sometimes brown, intermixed with small whitish coloured particles.

3. "The same thing is sometimes observed. Towards the conclusion of the disease, it becomes thick, opaque, and highly offensive; but is still intermixed with a frothy mucus.

4. "The fragments of cartilage, which are brought up, resemble more a portion of one of the cartilaginous rings of the trachea or bronchia. (See Aretaeus, Riverius, Raulin.)

5. "The expectoration is brought up rather by a slight teasing cough, seated in the larynx, than a full, deep cough, extending profoundly into the chest; or as Thomann has it: *continuo excreavit sine tussi sputa puriformia*," (p. 166-63.)

5. "The patient can designate the point, in the lower part of the neck, from which the expectorated fluid is brought up.

§ 5. *Respiration.*

PHTHISIS LARYNGEA.

1. "The difficulty of breathing comes on by degrees, but when once established, continues for some time in that state, and is often croupal. When the dyspnoea is most strongly developed, the lungs remain free, and can be inflated with air if the spasm of the glottis will admit. Occasionally there are slight paroxysms of dyspnoea, which disappear, however, as soon as a little mucus is removed by expectoration.

3. "The respiration is irregular or interrupted.

3. "The breathing is shrill, frequently audible at a considerable distance, and wheezing, especially during an inspiration."

PHTHISIS TRACHEALIS.

1. "The respiration is often difficult, but does not preserve that character for any great length of time. Paroxysms of such violence take place, as to render it difficult for the patient to breathe, except in the upright posture. These fits come on suddenly, and sometimes continue several hours. They are, however, so little in relation with the progress of the disease, that towards its conclusion, they often become less frequent, and much milder.

2. "It is not interrupted by spasm.

3. "The sound of the respiration is also altered; it is rougher, more rattling, or *bronchitic*; it seems to come from a depth, but the hoarse respiration is only observable during one of the fits of dyspnoea, when it can be heard at a considerable distance. In the last stage of the disease, the respiration is similar to that which is occasioned by the pressure of an aneurism of the aorta, upon the trachea."

These are the principal symptoms, which, by being compared with each other, and examined in relation with the individual affections to which they belong, are to enable us to distinguish between laryngeal and tracheal phthisis. Dr. Sachse has detailed several others, which, however, being less to be relied upon, we shall not examine particularly. They are sneezing, the mucous incrustation of the tongue mentioned above, disease of the fauces, difficulty of deglutition, palpitation of the heart, fever, salivation, emaciation, &c. Many of these, it will be seen, belong equally to both affections; and can be of but little use in forming a diagnosis between them. The characters which have been already detailed, will, however, be sufficient to enable us to distinguish the one of these affections from the other. We shall next consider the diagnosis between tracheal and pulmonary phthisis.

Although it often happens that the one or the other of the diseases we have been describing, exists while the lungs remain in a healthy condition, yet, in many instances, the lungs are at the same time involved. Under these circumstances, it is too apt to be inferred that the disease is not of a very dangerous character, while the lungs are not implicated, an opinion which the almost un-

varying fatality of laryngeal and tracheal phthisis proves is far from being correct. To form a diagnosis between phthisis trachealis and phthisis pulmonalis, we must consider the several symptoms by which they are characterized.

1. *Hoarseness*.—Though it sometimes shows itself at the commencement and termination of pulmonary consumption, it does not, according to our author, constitute one of the essential symptoms of that disease. In proof of this, he states that an entire lobe of one of the lungs has been destroyed, without the patient evincing any hoarseness, and, indeed, scarcely any cough. It has been seen above, that hoarseness is a common symptom in laryngeal consumption.

2. *The Sensation about the Throat*.—There is seldom much uneasiness about the throat in pulmonary consumption; but the patient frequently complains of sharp pains in the chest, which are altogether wanting in laryngeal phthisis, and in phthisis trachealis only consists of a kind of sensation of forcing outwards, experienced directly beneath the sternum. In pulmonary consumption, where the upper and posterior part of the lungs are affected, in consequence of the exposure of the nerves of the lungs to the irritation, and their connexion with the intercostal branches, the patient complains of acute pain between the shoulders.

3. *Cough*.—It has been observed by Lieutaud and Morgagni, that in some cases of pulmonary consumption, the cough is entirely wanting. Dr. Sachse considers that such an occurrence is only possible where the ulceration is far removed from the bronchia. In pulmonary consumption, the cough is always worse in the evening, and is relieved by the perspiration which breaks out towards morning. In tracheal phthisis, on the contrary, the cough is most troublesome in the morning.

4. *Expectoration*.—In laryngeal phthisis the expectoration is usually scanty; in the tracheal form of the disease, when most abundant, it consists of a thin fluid, intermixed with striæ of purulent matter. In pulmonary phthisis, on the other hand, the patient is sensible of its coming from some profound part of the chest; it is more homogeneous, thicker, and more globular than in the disease last mentioned, and is, in some cases, intermixed with small fragments of disorganized tubercles, or even of the tissue of the lungs.

5. *Respiration*.—The respiration in pulmonary consumption does not present the croupal character which is observed in the other diseases; and in only a few instances does it present the paroxysms of dyspnœa which have been pointed out. “Je n'en ai pas un seul qui ont présenté les accès de suffocation, le râle et le sifflement de la respiration.” (Cayol, 33.)

6. *Loss of voice, sternutation, difficulty of deglutition, outward tumefaction of the neck, the incrustation confined to one side of the tongue, and the disposition to grasp the throat during a paroxysm of coughing*, which are symptoms observed in laryngeal and tracheal phthisis, are not met with in pulmonary consumption; on the other hand, the *hæmoptisis*, the *phthisical conformation of the body*, the *purulent deposition in the urine*, the *wasting perspirations*, the *inability to lie upon the side*, the *frequent recurrence of pneumonic inflammation*, the *hectic blush on the cheek*, and the *dull sound of the chest elicited by percussion*, which are almost constant attendants on phthisis pulmonalis, are not observed in laryngeal and tracheal phthisis. In laryngeal phthisis, the respiration is inter-

rupted: in pulmonary consumption, the obstacle which opposes the full expansion of the lungs, renders it impossible for the patient to hold his breath for any length of time; and the expiration is consequently short and hurried.

7. The duration of tracheal consumption is much shorter than that of pulmonary consumption; the latter often continuing as many years as the former does months.

By attending to these circumstances, we shall be enabled in most instances to distinguish between the diseases in question. Yet, even with the greatest precaution, and the most acute discrimination, we shall be too often exposed to error. To this dilemma we shall, indeed, be always exposed, so long as we trust to the ordinary means of examining diseases of the chest; and it will only be by availing ourselves of the advantages of the stethoscope, that we shall be enabled to escape from these difficulties. We are, therefore, sorry to observe that Dr. Sachse seems to be unacquainted with the use of that invaluable instrument, or that he has not availed himself of the important indications furnished by it in establishing the diagnosis in these diseases.

We might next consider the diagnosis between the diseases already mentioned, and aneurism of the aorta, and the several other affections alluded to above. We have, however, already extended our observations so far as to render it necessary to bring them to a close. We have been induced to be thus minute, because, in the first place, we considered the matter of Dr. Sachse's work to be highly interesting, and, in the second place, because it purports to be a continuation of the very able work of Wichmann, *Ideen zu einer Diagnostick*, 3 Bde. 8vo. Helwing, 1794, 1802. In both respects we find much to commend, yet we think the author has indulged in numberless minute details, which would have been better omitted, as not leading to any very valuable conclusions.

While we are on the subject of diagnosis, we cannot forego the opportunity thus afforded us of expressing our regret that we have not in the English language, a single work, proper to aid the student in this most difficult and important part of his medical education. It is true, the work of Marshall Hall contains much that is useful; but it is too defective, in both matter and arrangement, to supply the wants of the student, and can never be relied upon as a guide in this department of study. In France and Germany, where the subject of diagnostics is made an object of special study, several works of great merit have been published on the subject. In the former country, those of Landré, Beauvais, (*Semiotique*, Paris, 1818,) and Double, (*Semiologie Generale*, 3 vol. Paris, 1811, 1822,) are highly commendable; and in the latter, the works of Wichmann, Schmalz, (*Versuch einer Mediz-Chirurg. Diagnostik in Tabellen*, Hal. 1816,) and Hufeland, (*Conspectus Morborum sec. ord. nat. adjunctis characteribus specif. Diagnosticis*, 1819,) have supplied what is so much wanted by the English and American student. It is too much the practice, under our present defective system of medical instruction, for the student merely to attend to the heterogeneous string of symptoms which are appended by authors and teachers to each malady, and to lose sight entirely of the proper value of each of these symptoms, as well in determining the precise seat of the disease, as its nature and the extent of its complications. Yet this is a kind of knowledge which we regard as of the most vital importance to the practitioner, and he who is destitute of it, cannot, we maintain, practice his art with success, or even safety.

E. G.

XII. *Researches; principally relative to the Morbid and Curative Effects of Loss of Blood.* By MARSHALL HALL, M. D. F. R. S. E., &c. London, 1830. pp. 303. 8vo.

The principal object of this work, as stated by Dr. Hall, is to apprise the inexperienced of some unexpected phenomena arising from loss of blood—of the remarkable difference of tolerance or intolerance of loss of blood in different diseases—of the equal danger of an inefficient and undue use of the lancet—and of a rule which may be adopted to obviate this danger. Dr. Hall also attempts to establish a distinction between irritation and inflammation in their respective effects on the system.

The work is divided into two parts, with appendices to each. The first treats of the morbid effects of loss of blood; and the second of the curative effects of this evacuation. We shall briefly examine each of these.

The detraction of blood is perhaps the most common mode resorted to in this country for arresting the progress of inflammations, and for relieving certain morbid affections, and yet there is scarcely any one subject connected with the practical duties of our profession, that has received less attention than that of the due institution of blood-letting. In fact, in the detraction of blood we have been wholly acting on empirical principles; and the lancet has been in too many instances employed or withheld without the physician being able to assign just grounds for his practice. But we will not attempt at this time to enter into any general consideration of this important topic, but will restrict ourselves to following Dr. Hall in his observations. The morbid effects of loss of blood, he observes, may be divided into the immediate, and into the more remote. The first, besides syncope, from its slightest to its most fatal form, includes delirium, convulsions, and coma. The latter comprising the states of excessive reaction, of defective reaction, of the gradual failure of the vital powers, and of more rapid or sudden sinking or dissolution. The latter have not received a sufficient degree of attention; we know of scarcely any author that has described them with accuracy.

Under the head of the immediate effects of loss of blood, Dr. Hall first treats of syncope, the most familiar of all its results. This state is so well known that little that is new or interesting can be said on it. After syncope, convulsions are perhaps the most frequent consequences of a flow of blood. These are most apt to occur in children, and in cases of slow and excessive detraction of the circulating fluid, and always denotes that the remedy has been urged beyond a safe degree: the same may be said of delirium, but it is important to remark that this latter state may ensue where a small quantity only of blood has been abstracted, depending on what Dr. Hall terms intolerance of loss of blood, or a morbid susceptibility to its effects. The other immediate effects of loss of blood are coma, and sudden dissolution; the first of these may mislead a cursory observer, from its resemblance to apoplexy, but an attentive survey of the symptoms will always make the case clear.

The more remote effects of loss of blood, are—1st. Exhaustion with excessive reaction. It is well known to every practitioner that exhaustion may assume several different characters. It may be attended with excessive, or with defective reaction, or with actual sinking of the vital powers. That, following or-

dinary syncope is generally a simple return to a healthy state of the functions, or nearly so, the pulse not passing beyond its natural frequency. But where the hæmorrhage has been profuse, the recovery is not so uniform, and the pulse may acquire and retain a morbid frequency for a certain length of time, which gradually subsides; but where exhaustion is induced by repeated blood-lettings, all the symptoms of an excessive reaction may supervene; these are very well detailed by Dr. Hall, and deserve close attention. In this state of exhaustion, sudden death has ensued from muscular exertion on the part of the patient, or from his being rapidly raised from a recumbent posture.

2d. Exhaustion with defective reaction. This occurs most frequently in infants, in feeble persons, and in rather advanced years; this state either gradually yields to returning strength, or subsides into sinking; by this is meant a state of positive and progressive failure of the vital powers. One of the first indications of it, says our author, "is to be found in the supervention of a crepitus in the respiration, only to be heard at first on the most attentive listening, but gradually becoming more audible, and passing into a rattling in the bronchia and trachea." This state, Dr. Hall thinks, involves a greatly impaired condition of the brain, and may be compared in certain points to that induced by apoplexy, or from dividing the eighth pair of nerves. This opinion is confirmed by the observations of Andral, who says that the lungs present similar appearances to those of animals in whom the pneumogastric nerves had been divided, or of individuals who died apoplectic.

It sometimes happens "that the most prominent symptom in exhaustion from loss of blood is a state of amaurosis." This has been observed by several writers, but more especially by Mr. Travers, from whose work Dr. Hall makes a copious extract, of which practice he is too fond, for instead of merely mentioning that his opinion is confirmed by certain authors, he loads his pages with their cases and arguments at full length. He thinks that the symptoms of exhaustion with reaction have frequently been mistaken for those of inflammation, and that recourse has too often been had to the further detraction of blood. This is the more likely to ensue, as all the symptoms are greatly relieved by it for the moment, though eventually they return in a more aggravated form. It should be observed, that in cases of exhaustion with reaction, syncope is very soon produced by the further loss of blood, and should always be regarded as a warning against the further and inconsiderate use of the lancet. Where the detraction of blood is repeated still further, not only syncope, but a state of sinking is induced, which is either rapidly followed by dissolution or by a gradual failure of the vital powers.

As relates to the influence of various circumstances in opposing or inducing the phenomena of exhaustion in cases of loss of blood, Dr. Hall remarks, the first and principal is that which relates to the strength of the patient, as, *cæteris paribus*, the degree of reaction is in proportion to it. Thus, in infancy, in declining years, and in the feeble in constitution, there is defective reaction after loss of blood, and the state of syncope is always one of danger, whilst repetitions of venesection are usually borne with difficulty. In youth, and in the vigorous and robust, on the contrary, the reaction is strong, and especially marked after repeated bleedings.

The other circumstances which exert an influence on the effects of loss of
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blood are certain states of disorder, but as the author discusses these at more length in a subsequent part of his work, we will not notice them at present.

Dr. Hall seems to think that there is reason to suppose that a state of exhaustion from loss of blood may lead to effusion into the ventricles of the brain, and that such a state is no protection against an attack of sanguineous apoplexy; the latter of these positions he supports by the authority of Denman and Hey, and details some cases from them in corroboration.

"After the brain," says our author, "it becomes necessary to examine the condition of the lungs, and it is by the stethoscope, that the very first symptoms of sinking from loss of blood will be discovered. The bronchia first become clogged, the lungs become œdematous, and the arterialization of the blood is defective."

"The state of flatulency, sometimes almost amounting to tympanitis, and the fœtid evacuations of the intestines, sufficiently denote the morbid condition of that internal organ."

Dr. Hall next proceeds to the consideration of the treatment of the effects of loss of blood, which he properly observes must be resolved into that which is general or constitutional, and that which is local, and must vary according to the peculiar state or stage of these effects.

"When syncope assumes a dangerous form, the principal remedies are, an attention to the posture of the patient, stimulants, and chiefly brandy and the transfusion of blood. The effect of posture is not even now fully known. It would be easy to allow the patient to lie over the edge of the bed, the head low upon the floor, and the feet greatly raised. In this manner such pressure would be restored to the encephalon as would in many cases support life, until other remedies being administered the patient might be placed out of immediate danger."

This appears to us to be carrying the matter too far, for although a low position of the head is certainly advantageous, this hanging a patient with his head down, would, we are inclined to think, substitute greater evils than those it was intended to remove.

We need make no observations on the importance of diffusible stimulants in such cases, their efficacy is too well known to every practitioner to need comment.

As regards transfusion, Dr. Hall does not give any decided opinion, though, from the tenor of his remarks, we presume that he is in favour of it. He justly observes, that it too frequently happens that the proper period of adopting this measure is allowed to escape. Notwithstanding the cases which have been latterly detailed, in which transfusion was resorted to, in cases of uterine hæmorrhage, with apparent success, we are by no means persuaded that this remedy is as efficacious as its advocates appear to think it. In some of the cases it is very evident that the recovery was more attributable to the natural reaction of the system, than to the small quantity of blood injected into the veins.

In all these cases of syncope, a due attention must be constantly paid to assist the arterialization of the blood by the admission of fresh air, and to sustain the natural heat by proper clothing, and especially warm applications to the feet.

In cases of excessive reaction, "the remedies appear to be, first, extreme quiet of body and mind, then the mildest sedatives, especially the hyosciamus; thirdly,

the mildest nutriments; and lastly, and above all, time. It may be necessary to subdue the throbbing action of the head by local blood-letting, and it is remarkable how small a quantity of blood being taken will relieve. Two or three leeches are frequently quite sufficient. But the most unequivocal remedy is a cold spirituous lotion, applied over all the head by means of a cap consisting of one fold of a stocking."

In the administration of diffusible stimulants in exhaustion with sinking, Dr. Hall remarks, that great caution is requisite. Too much stimulus would hurry the action of the heart. The proper criterion for their use, is, that they should allay the morbidly increased action of this organ. For this purpose opium has also been recommended, but it should be given in small doses, and its effects closely watched.

The first appendix to part the first is devoted to the consideration of the similarity between loss of blood, and the bloodlessness of chlorosis. These two diseases, Dr. Hall observes, resemble each other in many particulars, as the general symptoms, the tendency to affections of the head resembling arachnitis, and to affections of the heart simulating organic diseases of that organ; the condition of the general surface, of the capillary and larger circulations, the proneness to œdema and serous effusions.

The differences that exist between them arise from the different modes of their accession, the loss of blood being a simple event, whilst the bloodlessness of chlorosis is the gradual effect of a previous state of complicated disorder. Dr. Hall supports this opinion by some cases, which prove we think little more than, that in the advanced stages of chlorosis there may be effusion in the brain or thoracic cavity, as the case of sudden death was attended with similar circumstances as those occurring from hydrothorax.

The second appendix, on a hydropencephaloid affection of infants arising from exhaustion, is extremely interesting. This subject appears to have attracted much attention from the author, and has also been treated of by Dr. Abercrombie in his "*Researches on the Diseases of the Brain and Spinal Marrow*," and Dr. Gooch in his recent work on "*Some Diseases Peculiar to Women*." This form of the disease having received little notice in this country, we shall give a full analysis of this portion of the work.

After premising that certain diseases of children appear to be well understood, Dr. Hall goes on to say, "but there is another source of disorder in infancy, less frequent perhaps in its operation, but not less important in its consequences, and far less understood by medical men, in exhaustion. This exhaustion has its origin in early infancy, chiefly in diarrhœa or catharsis; in the later periods of infancy, in the loss of blood, with, or without the relaxed or evacuated condition of the bowels."

He is also of opinion that the greatest proportion of fatal cases of disease in infancy, are attributable to an undue application of exhausting remedies. This is true to a certain extent, but not to that laid down by our author; we have been too apt in our treatment of infantile diseases, to think that we have fulfilled our duty, if we have bled and purged enough, when perhaps we have been exasperating irritations of some of the tissues that would have subsided without danger or difficulty under a milder course of practice.

Dr. Hall divides the disease under question, into two stages, that of irritability, and that of torpor; in the former there appearing to be a feeble attempt at reaction, and in the latter a complete prostration of the nervous powers. This morbid affection is usually induced by some derangement of the chylipoietic viscera, as diarrhoea, exasperated by the too free use of purgatives. The child "becomes irritable, restless, and feverish, the face flushed, the surface hot, and the pulse frequent; there is an undue sensitiveness of the nerves of feeling, and the little patient starts on being touched, or from any sudden noise, there are sighing, moaning during sleep, and screaming, the bowels are flatulent and loose, and the evacuations are mucous and disordered." In such a state of things, if the nature of the affection be mistaken, and evacuations persisted in, the subsequent exhaustion is apt to lead to a very different train of symptoms. "The countenance becomes pale, and the cheeks cool or cold, the eyelids are half-closed, the eyes are unfixed, and unattracted by any object placed before them, the pupils unmoved on the approach of light, the breathing, from being quick, becomes irregular, and affected by sighs, the voice becomes husky, and there is sometimes a husky, teasing cough, and eventually, if the strength of the little patient continue to decline, there is crepitus or rattling in the breathing, the evacuations are usually green, the feet are apt to be cold." In these cases, as in those in which the strength of the child has been subdued by an undue abstraction of blood, stimuli are absolutely required; a treatment founded on an erroneous idea of a primary cerebral affection, only adding to the danger.

In all cases of hydropcephalus we should be upon our guard not to mistake the stupor or coma, into which the state of irritability is apt to subside, for the natural sleep, and an indication of returning health.

The remedies for this morbid affection are such as will check the diarrhoea, afterwards regulate the bowels, and restore and sustain the strength of the little patient. In the state of irritability the warm bath is a remedy of great efficacy, and during the coma, blisters or sinapisms to the nape of the neck are of service. In every case the extremities are to be kept warm, and the circulation in them promoted by frictions. The patient should never be suffered to assume an erect posture.

Dr. Hall gives some extremely interesting cases occurring in his own practice, and that of others, strongly corroborative of his opinions on this subject, and we regret that our limits will not permit us to subjoin them. This question, and that of exhaustion in children, open a wide field for investigation, as they are not only imperfectly understood, but highly erroneous opinions exist on them.

The two next appendices, on exhaustion arising from other sources besides loss of blood, and that from abstinence, are very short, and contain nothing deserving of notice. The last, on the state of sinking, however, is worthy of attention, as it relates to a subject which, though familiar to every practitioner, is one on which no settled opinions appear to exist, and yet it is of the utmost importance to distinguish this state, both on account of the prognosis and treatment.

"Amongst the first effects of the sinking state, is frequently the subsidence of some painful symptom as delirium, cough, or even pain itself, into a state of

ease, or perhaps of dosing. This event is continually mistaken by the patient and his friends for a favourable alleviation of the disease; the physician himself even may leave his patient in hope, may raise the hopes of relatives, and may even propose to postpone his succeeding visit under this false impression, when perhaps the patient is dosing to awake no more."

In cases of sinking from exhaustion, there is obviously a failure of the powers of the whole nervous and secretory systems, manifested by its effects on the functions of the brain, heart, lungs, and intestinal canal, but where this state occurs from oppression of the brain, the mechanism of respiration is chiefly affected; and when the sinking arises from a clogged state of the bronchia and air cells, there is manifestly a defective arterialization of the blood; and lastly, if it takes place in certain affections of the stomach and bowels, as gastritis or enteritis, &c. there is great, and oftentimes sudden failure of the circulation, indicated by an extremely small pulse, with a cessation of pain.

A correct view of this subject is extremely important in making a prognosis, and the physician should be fully aware of the fallacy of some symptoms of apparently a favourable character. Dr. Hall is of opinion that one of our best guides is the presence or absence of the crepitous rattle hitherto spoken of. "From the moment," says he, "this peculiar symptom is observed, it may, as far as our present means extend, be regarded as of fatal omen." In this we do not agree with him, at least to this extent, as we have seen more than one instance of recovery after this symptom had been fully established, though there can be no doubt but that it is, in most cases, a peculiarly bad omen.

There are several other symptoms besides the crepitus, which usually attend this state. "These are a species of inflammation of the conjunctiva, arising I believe from the eyes being for a long time imperfectly closed; great and irregular frequency, and a feebly vibrating character of the pulse; dosing; sighing in the breathing; difficult digestion; a tympanitic tumidity of the bowels; retention of urine, and involuntary evacuations."

Part the second, embraces the consideration of the curative effects of loss of blood.

It is well known to every practitioner, that patients of similar strength and constitution, but affected with dissimilar diseases, are differently affected by a sanguineous evacuation. Some will faint before four ounces are taken away, whilst others will bear fifty or sixty without syncope being induced. The rationale of this is to be found in connexion with the fact of the different susceptibilities of the system induced by different diseases.

Dr. Hall has given the following scale of these properties:—

"Persons in health, and of moderate strength, will generally faint, if bled in the erect posture, on taking fifteen ounces of blood. I have known seventy to be taken in the sitting posture, in the tendency to apoplexy without syncope, but the case is an extreme one. Patients with pleuritis or pneumonia frequently lose thirty-five ounces, without fainting. In bronchitis little more is borne to be lost than in health. A stout person in fever will frequently faint on losing ten, twelve, or fourteen ounces of blood. In intestinal irritation, with urgent symptoms even, the abstraction of nine or ten ounces will generally induce deliquium. In delirium tremens, or puerperal delirium, the patient soon faints from loss of blood. The same thing is still more observed in those cases of violent reaction which

arise from the loss of blood itself. In dyspepsia, hysteria, and chlorosis, the susceptibility to syncope from loss of blood is very great."

Dr. Hall thinks that the quantity of blood which flows, when a patient requiring full blood-letting, is placed upright and bled to deliquium, is accurately proportioned to the exigencies of the case, and the powers of the system. This rule is also suited to the degree and duration of the disease, for, with each of these, its influence in inducing tolerance or intolerance of loss of blood is respectively augmented.

As much injury has been done by an inefficient, as by an undue use of the lancet; from both these extremes, Dr. Hall says the rule just alluded to will guard us. An important question relates to a repetition of blood-letting. But we may lay it down as a rule, that it should be prompt, according to the tolerance of loss of blood in the previous venesections. It is never safe to bleed to deliquium in a recumbent posture, as more blood may be abstracted than comports with the real exigencies of the case.

Dr. Hall next enters upon the consideration of particular diseases in their relation to the loss of blood, and the first he notices is fever, the theory of which he does not appear to clearly understand. His idea is, that fever differs from inflammations, in being an affection of the whole nervous and vascular systems, instead of an affection of these systems in one part or organ. We shall not, however, attempt in this place to enter into a discussion of this knotty point, but will confine ourselves to the subject of blood-letting alone. "There are three circumstances in fever," says our author, "which should lead to the use of the lancet. The first is, excessive reaction of the vascular system; the second, much excitement of the nervous system, especially violent delirium, and the third and the most imperative, the existence of local inflammation." The two first require the lancet to be used with great caution, but in the latter it may be used freely.

In inflammation, a state of the system is induced, which protects it from the influence and effects of loss of blood; it in fact acts as a concentrated and permanent stimulus, in exciting and maintaining the powers of the system. Even syncope does not remove it, but merely subdues the constitutional effects of this stimulus.

Dr. Hall is not an advocate for pushing the abstraction of blood to actual syncope, but only to the first signs of its approach, and highly deprecates the use of the lancet, after the inflammation shall have been subdued.

His next chapter is on irritation, which we must confess we do not clearly comprehend; his ideas on this subject are so much at variance with all physiological facts, that it is difficult to ascertain what he really means by irritation. We will, however, give his views, and leave our readers to draw their own conclusions.

"The most frequent cause of this affection is a disordered state of the contents of the colon, the next is some indigestible substance taken into the stomach, with some superadded cause, some shock sustained, or some effort made by the system, which rouse into activity the cause of irritation otherwise dormant. The effects of intestinal or nervous irritation, are chilliness, varying from coldness of the extremities to extreme rigor, followed by great heat of the surface, and symptoms resembling those of arachnitis or peritonitis, singly or suc-

cessively in their most acute forms, but especially arachnitis; more rarely there is pain resembling that of pleuritis; more rarely still, a peculiar pain passing along one side of the neck to the shoulders, and occasionally, generally after blood-letting, there is palpitation of the heart."

These symptoms, he says, have usually been confounded with inflammation of the organs chiefly affected, to the great injury and even danger of the patient, particularly in that form resembling arachnitis.

The forms of this morbid affection, which simulate peritonitis and pleuritis, are equally characterized by alternate chill or rigor, and heat, frequency of the pulse, and susceptibility to the effects of loss of blood.

Dr. Hall then proceeds with a further detail of its symptoms:—

"It generally begins in the manner of a sudden attack. This attack is usually ushered in by rigor, indeed by a more distinct and decided rigor than is observed in many cases of inflammation; the rigor is usually soon followed by much heat of surface; with the heat, the patient experiences some affection of the head, chest, or abdomen, and indeed, frequently of all; there are vertigo on raising the head, pain and some morbid impression on the mind, panting in the breathing, fluttering about the heart, with general hurry, irritability, and restlessness; the tongue is white and loaded; the alvine evacuations are morbid, dark coloured, fetid and scybalous, or yellow like the yolk of an egg, or of the appearance of yeast; the urine is turbid and frequently deposits a copious sediment. The affection of the head consists of the most acute pain, the greatest intolerance of light and sound, and the severest form of vertigo; wakefulness, and distress, and sometimes even delirium, and the pupils of the eyes are often extremely contracted. The affection of the chest is denoted by severe and acute local pain, which is apt to vary its situation, passing from one side to the other, or to the back, or occupying a situation higher up or lower down."

When the abdomen is affected, there is acute pain and tenderness on pressure, both of which Dr. Hall is of opinion, are not invariable pathognomonic signs of inflammation. If the heart be the seat of this disease, there are violent and terrific attacks of palpitation, both in this organ and in the carotids and abdominal aorta.

The mode of treatment he recommends, is a full evacuation of the stomach and bowels, anodynes, light nourishment, and certain local remedies, as cold lotions to the head, and fomentations and liniments to chest or abdomen. The lancet, he thinks, is scarcely ever needed.

The next subjects of discussion are, accidents and operations. In these, his observations deserve attention, as practitioners are too apt to bleed before a reaction of the system is established. The lancet should never be used after any severe remedy, during the continuance of the collapse of the system.

As regards the due institution of blood-letting, Dr. Hall makes some just remarks, though they are in general a repetition of those we have already quoted. With respect to the time when this operation should be practised, there can be but little doubt. Where a disease requiring this evacuation is formed, the sooner it is resorted to, the better. A single bleeding at this time is more effectual, and much less dangerous than if delayed, besides which, less blood is required to be drawn to answer the desired end.

The necessity and propriety of a first blood-letting must be determined by

the diagnosis of the disease, and a due estimation of the powers of the patient; this being determined, the next question is, what quantity should be taken? This can only be solved, in many cases, by watching the effects of the loss of blood as it flows. "And yet the usual mode of proceeding is, to prescribe the quantity of blood to be drawn, and forthwith to leave the patient in the hands of one from whom, however competent, the right, or at least the freedom of judgment is thus preposterously taken."

We have long been of opinion, that the usual practice in our large cities, and particularly Philadelphia, of leaving the patient in the hands of a mere bleeder, is fraught with evil consequences. Venesection, to be attended with its full effects, should always be employed under the eye of the practitioner himself. It is almost impossible for any one to decide what quantity of blood it may be necessary to abstract, by *a priori* reasoning.

The rule laid down by Dr. Hall, may obviate some of the evils arising from this mode of practice, though even this cannot supercede the necessity of a physician being present at the operation. His rule is to place the patient in an erect posture, and to make a moderate-sized orifice, permitting the blood to flow until incipient syncope occurs. The administration of the remedy is thus accurately suited to the nature and degree of the disease, and to the powers and susceptibilities of the patient. There are some limitations and exceptions to this rule which require to be noticed. Thus the case may be so mild as not to require so great an abstraction of blood. It is also requisite to observe whether the patient's feet are warm; otherwise less blood may flow in inducing syncope than will be required to subdue the disease. There is also danger in bleeding to syncope from a small orifice, as a much larger quantity will be required to produce this effect than is consonant with safety.

In determining the question of the propriety of a repetition of blood-letting, many circumstances must be taken into the account. But we may assume as a general rule, as long as blood-letting is required it can be borne, and as long as it can be borne it is required. Dr. Hall very justly thinks that little reliance is to be placed on the appearance of buff upon the blood. It is always a fallacious guide as regards the repetition of venesection.

Dr. Hall very properly protests against the use of the lancet as a preventive of disease. Of all cases in which blood-letting has been employed, none is so replete with danger. The lancet should never be used until the appearance of symptoms requiring its employment.

"Local blood-letting may be regarded in three points of view. First, it is useful as an auxiliary to general blood-letting in cases of inflammation; secondly, it is proper in some cases of irritation, in which general blood-letting could not be borne; and thirdly, it may be required in cases in which general blood-letting would be fatal."

The last chapter is on blood-letting in infancy and childhood. Children are more susceptible than adults to the insidious and often fatal effects of loss of blood, and require it to be used with great caution.

"The proper mode of abstracting blood in infants or children, whether by leeches, cupping, or venesection, is to place the little patient upright, and watch

the countenance. On the first indication of palor or faintishness, the flow of blood must be stopped."

Dr. Hall has subjoined a plan of a register of cases of blood-letting, which would be a most useful record, if properly kept; and we cannot recommend such a detail of facts, to practitioners in too high terms. It would do more to place the practice of venesection on a firm and useful basis than any other that could be devised.

It will be seen that we have been much pleased with Dr. Hall's work generally; we think that it is calculated to do much good in placing the subject of the due institution of blood-letting on a practical basis. Its principal fault is constant and unnecessary repetitions.

R. E. G.

ART. XIII. *Mémoire sur l'Angine Epidémique, ou Diphthérie.* Par F. P. EMANGARD, Docteur en Médecine de la Faculté de Paris. 4 Paris, 1829, 8vo. pp. 90.

Memoir on the Epidemic Angina, or Diphtheritis. By F. P. EMANGARD, M. D. Paris, 1829. 8vo. pp. 90.

The author of this production is a zealous disciple of Professor Broussais, and of course his reasonings and mode of practice have a direct reference to the doctrines of the physiological school of medicine. Though we are not ourselves a complete convert to these doctrines, yet we have always endeavoured to be open to conviction, and we must confess that the present memoir has gone far to confirm our favourable opinion of them.

The writer has endeavoured, and we think with some success, to prove that the epidemic angina or diphtheritis of M. Brétonneau is not, as supposed by that gentleman, identical with croup, but has its origin in the stomach, the anginous affection being preceded or accompanied by gastro-enteritis; and he maintains, contrary to the opinion of Mons. B. that diphtheritis does not essentially differ from scarlatina anginosa.

The result of the observations of Dr. Bianquin of the Arrondissement de Mortagne, where this epidemic prevailed in 1827, on more than three hundred patients treated by him, was that all those who were bled from the arm at the commencement, and the venesection repeated from the first to the second day, recovered.

M. Martin, a physician of Moulins-la-Marche also stated to the author, that he had occasion to treat seventy patients affected with this disorder, (during its epidemic prevalence in the cantons of Moulins, Bazoches, and Courtomer,) in all of whom the invasion of the disease was marked by symptoms of gastro-enteritis.

It may not be improper to state the topography of the district in which these cases occurred as related by M. Martin; it is situated not far from the shores of the Sarthe, which takes its rise in the commune, and near the church of Saint Aquilain, and is subject to frequent inundations of its banks. It is bordered by low and humid meadows, which are inclosed by very high hedges. There are frequently disengaged from these meadows, whose level is about fifty metres below that of the surrounding country, thick mists charged with gas of a very pe-

netrating and disagreeable odour. In this section of country the habitations are low, moist, and both badly ventilated and paved. The yards of the cultivators among whom this malady most frequently manifests itself, are occupied by pools and dunghills, which exhale an animal gas of a very disagreeable smell.

The inhabitants are engaged in agricultural pursuits, living on bread more or less badly prepared, into which barley and rye largely enter as constituents, together with milk, cheese, fruits, &c. drinking cider when the seasons are abundant, and rarely eating meat.

Several interesting cases are detailed by M. Martin, which we are constrained to pass over, noticing however, as we proceed, the remarks of Dr. E. respecting them. "In all the patients treated by Mons. M." says he, "the signs of gastro-enteritis have always been the first observed. General bleedings were employed with constant success, but did not always prevent the development of serious occurrences, although repeated from the commencement of the disease, which the application of leeches to the epigastrium would, I believe, have prevented." Our author had an opportunity in the year 1828,* to apply his principles to practice. That year was characterized by frequent and abundant rains; the portion of country where this epidemic presented itself is cut up by dales, at the bottom of which there flow small streams subject to inundations; and it is well covered with underwood, fir trees, and forests, combining all the causes of a permanent humidity, and a temperature nearly always cold. The inhabitants are located in these dales, on the borders of the woods, or in the midst of orchards, so as to be nearly deprived of the beneficent influence of the sun, and at the same time exposed to the action of marshy exhalations. Here an epidemic scarlatina made its appearance towards the end of February, 1828, and continued until autumn. Symptoms of gastro-enteritis either preceded or accompanied its development in every patient; leeches to the epigastrium at the commencement always disposed to a favourable termination, and frequently averted the angina and cutaneous eruption.

When this remedy was neglected, serious and often fatal occurrences resulted; the angina extended sometimes to the larynx, and produced the diphtheritic croup of M. Brétonneau. The scarlatina had disappeared or become very rare, when, in last October, he was called by M. Dubois, who stated that a girl aged 19, had fallen a victim to a gangrenous sore throat, and another aged 10, who was labouring under croupal dyspnœa, accompanied with delirium, perished in the night. A third, aged 15, had nausea, vomited and complained of constriction in the throat; the tonsils were red, swelled, and covered, especially the left, with a thin whitish pellicle; the pulse was hard and contracted; the abdomen excessively hot; the pulsations of the descending aorta and of the cœliac trunk, produced a true percussion strong and unusual, but distinctly perceivable, attesting that the abdominal arteries were in a high state of irritation; these pulsations had also been remarked in the other two girls, who had before sunk under the disease.

Under the conviction that the abdomen was the primitive seat of the disease which it was important to arrest, in order to prevent its extension to the brain,

* Dans les Environs de l'Aigle.

producing delirium, and the angina pharyngo-tonsillaris from becoming consecutively the croup of M. Brétonneau, our author applied thirty leeches to the epigastrium, and prescribed diluent drinks, emollient clysters, gargles, &c.

The angina was arrested; the symptoms of gastro-enteritis ceased, and very soon the inflammatory redness of the tonsils disappeared. Six other patients in the same house were attacked with the like formidable symptoms, to which the beforementioned means were applied, except that to two of them the leeches were repeated to the second or third time: delirium did not occur to any of these patients.

It would be tedious to detail all the cases mentioned by Dr. E.; suffice it to say, they were all treated on the same principles, and with marked success. He observes, "I have seen a great number of individuals perish, who were attacked with this disease, because they had neglected the sanguineous evacuations from the epigastrium, or very abundant general bleedings."

The epidemics described by Huxham, Planchon, Tissot, and Rosen, had for pathognomonic signs more or less aggravated symptoms of gastro-enteritis; but the most interesting evidence adduced by our author in support of his principles, is from the work of Vincent Ketelaer, a physician of Zealand, published in 1669, entitled "*Commentarius de aphthis nostratibus seu Belgarum Sprouw*," "a disease," says Dr. E. "which is nothing more than a phlegmasia of the mucous membrane of the digestive passages extending from the posterior part of the mouth to the tonsils and pharynx, producing pellicular concretions, which the authors calls pustules to distinguish them from aphthæ, properly so called, but which uniting and increasing in thickness, cover uniformly all these parts, and detaching themselves by fragments, (*frustulim*,) do not leave any trace after them of their existence; an affection in one word, offering in its attack, its progress and its terminations, the same phenomena as the *diphtheritis* or epidemic sore throat of authors." Bleeding or repeated purgatives succeeded well before the aphthæ had attained their entire development, but ceased to be applicable when this had occurred. When venesection had not been practiced at the commencement the affection became more malignant and dangerous, and in the advanced stages it would have been the height of temerity to have recourse to blood-letting.

"Who does not see," says our author, "in this succinct extract from the work of Ketelaer, the answer to all that has been said by M. Brétonneau, and repeated by his echos on the nature of diphtheritis, and on the danger of bleeding in its treatment?"

"If like the Zealand physician, these gentlemen had appreciated the epoch of the disease, which no longer allows the employment of blood-letting, they would not have drawn this evidently false conclusion from their observations, that diphtheritis is a specific phlegmasia."

Dr. E. now proceeds to point out the analogy between angina maligna and typhus fever; and in support of his principles he adduces the testimony of Ramazzini, and also of Aretæus of Cappadocia, who, in describing a disease, which he terms ulcers of Egypt or Syria, details symptoms which are in effect the same as those which manifest themselves in epidemic angina or *diphtheritis*.

He locates the cause of the development of the malignant angina in the stomach;

here the first impression of the disease is made, and is thence transmitted to the organs of respiration and deglutition.

It is worthy of remark, that Aretæus recommends during the inflammatory state of this malignant disease, venesection, cataplasms, clysters, cupping, &c. and that it is only in the second stage, when the first indication is fulfilled, that he advises the use of astringents, such as alum and honey, gall-nut, oxyde of zinc, and wild pomegranate, to the posterior parts of the mouth.

The cause of the malignant, gangrenous, or diphtheritic angina, is to be traced to the presence of cold humidity, or putrid marshy exhalations, which, like the contagious emanations of typhus, or the miasm of variola are absorbed by the skin and mucous surfaces, and being transmitted to the visceral centre, exert their action primarily on the lining membrane of the stomach and small intestines, to which succeeds the diphtheritic phlegmasia.

Now, if we recall the characters of croup, properly so termed, and compare the manner of attack in his disease with that of diphtheritic angina, we shall be naturally led to the conclusion that these two affections ought not to be confounded. In fact, the angina maligna always succeeds to a gastro-enteritis, but croup has its origin in the larynx. In the first instance, the local bleeding ought to be from the epigastrium, in the second from the larynx. The epidemic angina, when it has not been properly combated by leeches to the epigastrium, or abundant and repeated venesection, will not be arrested by leeches to the throat, and some practitioners think it accelerates the fatal termination, which cannot be the case with croup; thus our author proceeds to draw a marked line of distinction between the two diseases.

A general description of the disease principally occupies the section to which we shall now proceed.

The pellicular or diphtheritic angina is always consecutive to a gastro-enteritis; it constantly appears as an epidemic, and consequently results from a general cause acting upon a greater or less considerable number of individuals subjected to its influence. We have seen, says our author, that a humid atmosphere charged with gas or marshy and fetid emanations, has been considered both by ancient and modern writers, as the cause of angina maligna; and we have also seen that these putrid emanations absorbed and carried into the digestive passages, occasion there a true miasmatic poisoning, as in typhus: hence the primary symptoms are those of a gastro-enteritis more or less intense. The patient has rigors, and an indefinable uneasiness, nausea, and vomiting, with or without pain of the epigastrium; the tongue is red at its borders and apex, and it is more or less coated at the base. This state continues sometimes two or three days before the signs of an invasion of the other mucous membranes are observed; but sometimes also the transmission is more prompt. The dysuria and the soreness of the throat take place in a short time; the tonsils, the pharynx, the palate, and the nasal fossæ become red; a whitish coating begins to appear, takes a colour varying from gray to brown, acquires consistence, and may extend itself to the larynx and bronchia, producing suffocation. This disease more particularly attacks children, young girls, and women, but may also assail even robust men.

It is remarkable that at the same time this affection occurs, we see epidemic fevers arising from the same general causes, prevail, and establish by their pre-

sence and the uniformity of the symptoms at the commencement, the identity of these diseases.

The treatment is begun by an abundant capillary bleeding from the epigastrium by means of leeches, to be repeated if deemed necessary. When leeches cannot be procured, venesection should be practiced, and repeated from the first to the second day after the attack; later than this, they will be inefficient, and even dangerous, accelerating the fatal catastrophe, as in the application of leeches to the throat at a late period of the disease. This may explain the failures experienced by Marteau d'Aumale, Brétonneau, and all who have had recourse to this remedy too late. To this cause we may also impute the want of success, complained of by Ramazzini, in the epidemic of 1690, a fever, in which from the fourth to the seventh day, a petechial eruption developed itself, at which epoch, venesection was always fatal, whilst a popular remedy, the scarificator and cups, applied when the lassitude, pain in the limbs, and vomiting, announced the invasion of the disease, without consulting the physicians, contributed to effect a cure, and indeed their application was followed by extraordinary success.

At the same time we fulfil this primary indication, (leeching or venesection,) diluent drinks, emollient clysters, and the pyrothonid gargles are to be employed. When the disease has progressed, whether it has been combated by opportune, general, or local bleeding or not, the nitrat of silver in solution, and even in the second or third stage, stimulating the fauces with alum or diluted hydrochloric acid may be resorted to. "But," says our author, "I repeat, they will always be superfluous, if at the beginning the gastro-enteritis be combated by leeches to the epigastrium, or repeated general bleedings."

From what has been stated by Dr. E. of which the foregoing is but a brief outline, he comes to the following *conclusions*.—

1st. That the malignant, gangrenous, or *diphtheritic* angina, is always epidemic.

2d. That it is caused by the absorption of putrid miasmatic emanations, and their action on the mucous membrane of the digestive passages.

3d. That this lesion is indicated by all the signs of acute gastro-enteritis; that this phlegmasia is susceptible of a more or less rapid extension towards the throat, and it is only in this case that the angina exists.

4th. That when properly treated, it never extends to the larynx, so as to produce suffocation; so that the croup of M. Brétonneau is always the effect of negligence. It has no other resemblance to croup, properly so called, than the development of a membraniform concretion in the air passages; the etiology, mode of invasion, progress, and the different treatment required by the two diseases, repels all the idea of identity.

5th. That if there be any class of affections to which we can refer this disease, it is the typhus and epidemic gastro-enteritis. Since these, (as he has witnessed,) can terminate by a pellicular angina; they also have the same etiology, mode of invasion, and development, requiring also the same treatment. The same may be said of the epidemic cutaneous phlegmasias.

6th. That it would be more correct to apply to this disease the name of *gastro-enterite angineuse*.

The remainder of the volume is occupied with a critical analysis of an essay, No. XI.—May, 1830.

by M. Suchet, in which acute or convulsive asthma is stated to have affected a number of adult females, though our author considers them as cases of hysteria; they are not of sufficient interest to require a further notice.

C. B. M.

XIV. *Tabulæ Anatomico-Pathologicæ modos omnes quibus partium Corporis Humani Omnium Forma Externa Atque interna à normâ recedit, exhibeatis.* Auctore J. F. MECKEL. Fasc. primus cum Tab. CEn. viii. Lipsiæ, 1817. Fasc. secund. Tab. viii. 1820. Fasc. tertius, Tab. ix. 1822. Fasc. quart. Tab. viii. 1826.

The author of the work before us has long been known as one of the most distinguished anatomists of the age, and has, by the great ability of his numerous works, amply established his claim to this exalted station in the scale of public opinion. Descended from ancestors famous for their great proficiency in anatomy, he has by his diligence, and a mind truly philosophical, contributed more, perhaps, to the elevation of that department of science, than most of his predecessors or cotemporaries. The *Archives der Physiologie*, edited at first by the celebrated Reil, and over which the author himself has now the controul, constituted the principal vehicle of his numerous early contributions to anatomical science; and in these, as well as in his *Beyträge der Menschlichen und Vergleichenden Anatomie*, we find developed the elements of those truly philosophical principles which his subsequent labours have so successfully applied and unfolded. But the works that have contributed most to establish his reputation, are his *Handbuch der Pathologischen Anatomie*, 5 vol. Leipsic, 1812-1818, his work *De Duplicitate Monstruosa commentarius*, 1815, *Descriptio Monstrorum Nonnullorum cum Corollariis Anatomico-Phys.* 1826, *Handbuch der Menschlichen Anat.* 4 vol. 1815-1820, *Systeme der Vergleichenden Anatomie*, now in the course of publication, of which five volumes have appeared, and the *Tabulæ Anatomico-Pathologicæ*, before us. Of the several works enumerated, it is not for us to speak at present; the public voice has already proclaimed their merit, and we can only say, that we think the work last mentioned is well calculated to sustain the high reputation the author has already acquired.

It will be seen by a reference to the heading of these remarks, that the first fasciculus, containing eight copperplates, was published as early as 1817. The work was indeed announced as early as 1815, in the preface to the Dissertation on monstrosities, and from the date of the appearance of the first fasciculus, one has been published at intervals of from two to three years, up to 1826, at which time the fourth and last fasciculus made its appearance. Some time, we fear, must yet elapse before it can be completed. We sincerely trust, however, that the design expressed by the author, of representing by engravings, the principal anormal departures of the organization in its external and internal form, may not be relinquished, since such a work, when completed, will not only afford an invaluable treasure to the profession, but will constitute an almost indispensable appendage to the author's *Handbuch der Pathologischen Anatomie*, which it will be well calculated to illustrate. The value of the delineations of Sandifort, Baillie, Farre, and others have long been highly appreciated, and those of Professor Meckel, we feel assured, cannot fail to secure a still higher mark

of public approbation, since, instead of being representations of only a part of the abnormal conditions of the organs, they are intended to afford an exposition of almost every known departure of the organization from its natural condition; therefore supplying an important desideratum in pathological anatomy.

The first fasciculus is devoted to the delineation of the various important morbid conditions of the heart. The greater part of the figures present a high degree of interest, inasmuch as they are not drawn alone from cases which have fallen under the author's own observation, but from the most interesting examples of the disease in question, which exist on record. In representing the different abnormal conditions of the external configuration and internal arrangement of the heart and great vessels, Professor Meckel has not only furnished us with some very important examples of a departure from nature in these particulars, but has fully confirmed the truth of a proposition long since laid down by him; that such deviations approximate to the natural type of the same organs in some of the lower orders of animals. This is particularly exemplified in those figures which represent a free communication between both auricles and ventricles through their septum, thus representing the general type of the single heart of some animals.

The second fasciculus embraces the consideration of some of the alterations of form and texture to which the arteries are liable. Several figures are devoted to the anomalous distribution of some of the principal arteries, and furnish some very unusual and interesting deviations of that class. The most valuable plates, however, contained in the fasciculus, are those devoted to the subjects of aneurism, dilatation of the aorta, and the various alterations of texture which implicate the tunics of the vessels. All these subjects are delineated with much ability, and some very important examples of the several conditions enumerated are exhibited.

The succeeding fasciculus, with the exception of the first plate, which represents some morbid conditions of the jaws and teeth, is devoted, for the most part, to some of the primitive vices of conformation which are met with in the digestive organs. Some very curious anomalies of the pharynx, œsophagus, and stomach are represented. Amongst numerous other anomalies contained in this fasciculus, we observe several examples of diverticuli of the intestines, some of these very curious.

The fourth and last fasciculus that we have received, presents much more of practical interest than either of the preceding, since it embraces the consideration of intussusception and hernia. The most important pathological conditions that fall under these heads are admirably delineated, furnishing excellent exemplifications of the character and consequence of intussusception, as well as of the principal varieties of hernia, as inguinal, crural, umbilical, diaphragmatic, &c.

The tables of Professor Meckel are executed with great neatness and care, and are well calculated to preserve the several morbid appearances, the recollection of which they are designed to perpetuate. At the present period, especially, when pathological anatomy is made to constitute the very groundwork of the science of medicine, coming, as they do, from a source so respectable, and abounding with the most interesting materials, we think these tables must be hailed by every one, as an invaluable acquisition to the science,

and that all must cordially respond the wish expressed by ourselves, that the distinguished author will continue his labours in a cause fraught with so much usefulness, and complete his design so laudably undertaken. E. G.

XV. *De la Destruction Mécanique de la Pierre dans la Vessie; ou Considérations Nouvelles sur la Lithotritie. Mémoire lu à l'Institut, &c.* Par J. J. A. RIGAL, Paris, 1829, 8vo. pp. 97, plates III.

Improvements in the surgical art, particularly those of a mechanical nature, would, we might suppose, very soon assume their proper position in public opinion; since the evidence which in such cases is derived from our senses, must generally prove decisive. But, if a new operation of such tangible qualities, that its feasibility or impossibility—its value or inutility, ought readily to be ascertained, did nevertheless continue to divide medical opinion, even granting that facts were advanced on both sides, should we not rather incline to coincide with those, who prove the thing actually to have been accomplished, than with others, who having failed in their attempts, resort to reasoning to prove it impracticable?

Such appears to be the case with the operation of lithotritry, nor as yet, do the parties of either side seem disposed to yield the point to the other. There being but one *right side* to a question, and only one true inference to be drawn from a simple fact, it is natural to suppose that circumstances entirely foreign to the subject, must occasionally exert an influence in producing a diversity of sentiment. It is not necessary, however, here to enumerate the circumstances, that, with different individuals, and for various reasons, might occasionally have brought forward arguments against the operation, now so successfully practised by Messrs. Civiale, Heurteloup, and others. Our present object is of a very different nature, being, as we hope, an unbiassed review of the labours of one who merits all he asks—impartiality.

The zeal so peculiar to the French nation, seems to have been aroused to an unusual degree, on the subject of lithotritry, and for some years past, astonishing improvements in the instruments employed, have resulted from the ingenuity of those, who have engaged in the undertaking.

The favourable report made to the Academy of Sciences, by Messrs. Boyer, Serres, Flourens, Magendie, and Dumeril, appointed to examine the memoir and instruments of Mr. Rigal, has placed him high among the aspirants to fame, and induced us to present to the medical public an analysis of his views, with some account of the instruments he has described.

Mr. Rigal divides his memoir into three parts. In the first he considers catheterism by straight instruments, and the means by which to overcome the obstacles that sometimes prevent their employment.

The difficulties opposed to a general adoption of lithotritry for the destruction of urinary calculi, are still numerous, notwithstanding all that has been done to obviate them; one, and not the least important of these, has particularly excited the attention of Mr. Rigal, and indeed first induced him to enter into the investigation of this subject. We refer to circumstances connected with the urethra alone, preventing the success of the operation. "This inconvenience may arise from various causes: either the extreme sensibility of the urethra with some

subjects—or the too great curvature of this canal, with others, or from an enlargement of the prostate gland, and especially of its third lobe. A considerable number of patients being placed in some one of these conditions, would be obliged to forego the advantages of lithotomy, effected by the employment of straight instruments, if, by some means, a sound of this form were not made to penetrate into the bladder." Such means, Mr. R. has discovered, and put in execution. A case occurred to Mr. Leroy, in which a curved sound entered the bladder with the greatest facility and detected the presence of a calculus of moderate size; "but," (we quote his own words,) "when I wished to introduce the straight sound, it was impossible to succeed—&c. I procured a large gum elastic catheter, in which the straight sound entered with facility; I next had made a curved iron staff, which exactly filled the catheter, and whose rounded extremity formed a beak. I proposed first to introduce the large catheter, to withdraw the curved staff, and then to pass the straight sound in its place. The large catheter and its curved staff entered with facility, but when, upon having withdrawn the staff, I attempted to introduce the straight sound, I experienced an insurmountable resistance."

Upon examination per rectum, he discovered an enlargement of the prostate gland, which had been the cause of a retention of urine, and produced the failure in his attempts to introduce a straight instrument.

Mr. Rigal accounts for the want of success in this case, by supposing that "the gum elastic catheter had impressed a greater permanency, (*une fixité plus considérable*;) to the curvature of the urethra, and then the vesical extremity of the straight sound, striking against the inferior curve of the factitious canal, became there arrested by an insurmountable obstacle. I was certain of having discovered the means of overcoming this, in employing the sound I am about to describe."

Instead of moulding his gum elastic catheters, or bougies, upon a straight polished rod, as generally practised, he caused that extremity of the rod or sound which was to correspond with the vesical end of his bougie, to be cut in the manner of a male screw, for the space of about three inches and a half, the average length of the curvature of the urethra. Upon this screw was wound a piece of thin, softened iron wire, in such manner as to fill up the grooves of the screw to the level of the shaft of the sound. Thus prepared, this sound became the model upon which was wrought the silk net-work, &c. required to form a flexible catheter—the straight staff to the catheter being the rod, on which it has been formed. This being withdrawn, a curved sound was introduced in its place, and the instrument thus prepared, passed readily along the curve of the urethra into the bladder. The curved sound is then taken out, leaving the gum elastic catheter in the urethra. The next object is to reduce the curvature or obstruction in that canal, in order to facilitate the employment of straight instruments; to effect this, the straight staff is now introduced through the catheter, and by turning it as it advances through the screw, the curvature of the urethra is gradually overcome, until at length reaching the bladder, the whole instrument becomes perfectly straight, consequently the urethra also. By this means, Mr. R. hopes in time, so to overcome the obstacle, as to permit the employment of straight instruments, and even suggests, that a catheter of this construction,

might be made large enough to admit instruments for the destruction of a calculus at once.

It will probably be suggested, that the utility of this instrument, ingenious as it is, must depend, in a great measure, upon the benefit to be derived from lithotritry itself, to which it is only intended to be preparatory. Possibly, however, in cases where retention of urine arises from an enlargement of the third lobe of the prostate gland, a degree of pressure might be exercised, by converting a curved catheter into a straight one, sufficient to remove the obstruction, and also, in some cases of stricture, it may prove beneficial; as, for example, where the urethra is thickened for some space, when a straight instrument would exercise more pressure than a curved one.

In the second division of his memoir, Mr. R. presents us with an analysis of the various instruments recommended for the destruction of urinary calculi. He compares the practice of Mr. Civiale, (which consists in boring a hole, then loosening the hold of the calculus, to catch it again in a different position, and thus finally break it up,) with that of Mr. Heurteloup, who having once caught the calculus, does not leave it until it is excavated so as to form a hollow shell, easily broken up.

The objections which Mr. R. rather unnecessarily advances to these operations in succession, seem to have no other object than to prepare the reader for his own, a detailed account of which follows, and forms the subject of the third and last section. Having thus completely cleared the ground for the erection of his own pretensions, he starts with the principle, to use the words of Meyerrieu, his cotemporary and coadjutor, "that nothing beneficial will be effected in lithotritry, so long as we attack the calculus from the circumference to the centre, as generally done, instead of destroying it from within outwards." Objections, however, are suggested as applicable to the instruments of Mr. Meyerrieu, not necessary to detail here, to obviate which becomes his next object. On this point, after much labour, and successive improvements in the instruments, he offers the following reflections as the result.

"Is it not true, that if we could succeed in fixing a calculus firmly upon the drill, which had penetrated it, we might continue to set the calculus in motion, and destroy it by friction against the branches of the forceps, to which the operator would allow sufficient expansion, to favour the rotation of the body he wished to destroy? The forceps would first furnish the means of seizing the stone, and then become a kind of file, in the second stage of the operation. I did not fail to remark that these forceps being formed by a cylindrical tube, divided into three branches, each one of them ought to have on its internal face, and near the sides, two projecting edges. I had nothing therefore to change in this particular, and I observed six sharp angles, running the whole length of the blades, as inoffensive to the bladder, as well calculated to grind off the stone when applied to them."

It was necessary in the first place, to endeavour to enlarge the head of the drill, after it had effected an opening into the calculus, and to cause it to remain firmly fixed within the interior. To accomplish this, was contrived the instrument next to be described.

A steel drill, terminating in a spear-pointed head, is enclosed in a tube of the

same metal, whose vesical extremity is divided into two or three blades or prongs, which by their elasticity closely embrace the shaft of the drill. The head of the drill projects beyond these blades, thus forming an instrument, by which the stone may be perforated, the blades entering the perforation, at the same time, as if they formed a constituent part of the drill; this accomplished, the projecting head of the drill is to be drawn within the blades, by which they are expanded, and the stone firmly held; an idea of this instrument may be obtained by comparing it to a common round trocar. The blades being sharp and angular, on their outer faces, it is proposed, by working them forwards and backwards, in the perforation, to form small grooves in the calculus, accommodating them, thus making their hold upon it more firm and secure. The instruments just described are enclosed within a tube, whose vesical extremity constitutes the three-bladed forceps, calculated for seizing the stone, and are similar to those of Messrs. Civiale, Leroy, &c. with this addition only, that they present sharp ridges along their inner edges. The whole is embraced by the outer tube, as in the other instruments now in use.

The most essential difference, therefore, which is to be noticed between this instrument of Mr. Rigal, and those heretofore employed, consists, first, in his having one extra tube, which closely embraces the drill, and is expanded when the head of the drill is drawn within it; and secondly, in the forceps being competent to grind a stone, as well as to seize it. The operation then would consist, first, in catching the stone, and penetrating it with the drill in the usual manner; secondly, in securing it in such a way upon the drill, that, as our author remarks, they may form but one body; thirdly, in relaxing the blades of the forceps, so as to allow unimpeded motion to all within them; and lastly, by rotating the drill, and consequently the calculus attached to it, to grind off, or wear away the stone, against the sharp edges of the forceps. This part of the operation, he prefers accomplishing, by an arrangement different from the bow and pulley usually employed. The drill is fixed into a small wheel with oblique cogs, acted upon by a horizontal wheel, six times its diameter, thus making one revolution of the latter equal to six of the former. The larger wheel is turned by a handle. The advantages proposed to be gained by this suggestion, are, that the rotation is more rapid and more equable; the irregularities of the calculus, if there be any, are, as in the turning lathe, more easily ground off; and the operator can, with more precision, ascertain the degree of resistance offered to the process, so as to graduate the force by which to apply the blades of the forceps against the stone.

This, which may be considered as the first principle of the operation, would, we are ready to allow, be competent to the destruction of the greater part, or nearly the whole of a calculus—provided it be not beyond a *certain size*, and be not *flat* in shape. That portion which remains on the drill, is to be broken into fragments, by the forcible expansion of the instrument holding it, and this constitutes the second principle of Mr. R.'s invention. He asserts that calculi, even of considerable size and solidity, are broken with astonishing facility, by this application of an expanding power, acting from the centre to the circumference; and to the discovery and application of this fact, he attaches most importance, in which however we are not disposed fully to coincide with him. Mr. R. has subjoined also, the description of what he terms "a desk bed." This consists

of a portable box, which upon being opened and unfolded, furnishes inclined planes, attached by joints, calculated to accommodate the patient, and to place him properly for the operator, and which may be arranged upon any common table.

Mr. Rigal's suggestions, which seem to have been progressive, have in our opinion, led him a step too far; he is disposed to neglect the first principle of his operation entirely, and proposes hereafter, to break up a calculus, by the expanding power only, catching the larger fragments, and treating them in the same way as he had the original stone. This is all very well in theory, and equally easy to accomplish upon the dead subject; but he forgets that the *catching* a foreign body in the bladder, is decidedly the most difficult, most painful, and most hazardous part of the operation, and therefore he talks of "seizing fragments," as if it were always an easy task, and quite an indifferent matter to the patient. Decidedly the most important and effectual plan of effecting lithotritry, will ultimately consist, in catching a calculus but once, and then to complete its destruction.

The more minute mechanism of these instruments is much too complicated, for us to attempt any explanation, unaccompanied by plates to illustrate them. The principal features, we trust, are sufficiently delineated, to render that justice to Mr. R.'s pretensions, his ingenuity and perseverance so well merit.

J. P. H.

ART. XVI. *Ueber die Verletzungen des Rückenmarkes, in Hinsicht auf ihr Lethali-täets-Verhältniss.* Von Dr. JOHN LUDWIG CASPER, Practischem Arzte in Berlin, Mehrer gelehrten gesellschaften Mitgliecd. Berlin, 1823.

This is a highly interesting memoir upon the subject of which it treats—injuries of the spinal marrow considered in reference to their comparative fatality. Upon the questions involved in the discussion, there has always existed considerable diversity of opinion; some affirming that all wounds of the spinal marrow are necessarily fatal, while others have brought forward examples of such injuries in which recovery has taken place even under the most unpromising circumstances. It is certainly a subject of great interest, whether considered in a pathological or medico-legal point of view, and we are much indebted to the author for the talent and diligence he has evinced in travelling over the whole grounds, and drawing such conclusions as seem to be warranted by a mature and dispassionate examination of the subject in all its bearings.

Injuries of the spinal marrow are divided by Dr. Casper into three orders:—*Wounds, Compression and Concussion.* These are subdivided as follows:—

"A. *Wounds.* 1, Punctured; 2, Incised; 3, Contused; and 4, Poisoned wounds.—B. *Compression.* 1, From luxation of the vertebra; 2, Fracture of the vertebra; 3, Foreign bodies introduced by wounds of the vertebra so as to compress the spinal marrow; 4, From fluids thrown out, either by a preternatural exhalation or secretion, or extravasation occasioned by wounds.—C. *Concussion.*

The author, after considering the various modifications of these several species of injury, arrives at the following conclusions, which, as general rules, are, we think, sufficiently correct.

INJURIES ABSOLUTELY FATAL.

1. "Punctured wounds implicating the upper portion of the spinal marrow.
2. "Incised wounds of the same part.
3. "Laceration of the entire thickness of the upper portion of the spinal marrow.
4. "True dislocation of the cervical vertebra.
5. "A preternatural collection of fluid within the spinal canal."

INJURIES NOT ABSOLUTELY FATAL.

1. "Punctured wounds of the lower portion of the spinal marrow."
2. "Incised wounds of the same.
3. "True dislocation of the dorsal and lumbar vertebra.
4. "Fracture of the spinous processes of the vertebra.
5. "Concussion of the spinal marrow."

Exceptions to these conclusions will, doubtless, occur in some cases, yet we consider them sufficiently accurate as general rules, and as such we think they possess considerable value.

E. G.

XVII. *Précis Analytique et Raisonné du Systeme du Docteur Gall.* Avec figures, 4e Edition. Paris, 1829, 12mo. pp. 248, pl. XVII.

In the French capital, the present head quarters of medicine, every subject embraced by that science is now presented in the form of summary or manual. In such some such labour-saving contrivance seems absolutely necessary, since from the zeal and assiduity with which investigations are prosecuted, the increased number of authors and consequent multiplication of writings, we do not well see how one could otherwise keep pace with the periodical and other literature of the day, even should he have no other occupation than reading. In the small treatise before us, the plan has been applied to phrenology, and as it may gratify some of our readers to know what are the doctrines now promulgated abroad, we shall take advantage of the recent publication before us, to present a concise view of them.

The anonymous author represents himself as a pupil of the late Dr. Gall, whom he pronounces the most remarkable *savant* of the present epoch, invoking his manes to smile upon his efforts, and receive them as the expressions of his highest admiration and sincere gratitude. By the by, such indications of enthusiasm should put us on our guard, since we hold that the representations of no one under the influence of a high degree of this feeling, are to be entirely trusted. Previous to its first appearance, the summary was submitted by the pupil to his master, who not only approved of its doctrines, but recommended its publication as calculated to render these more popular, a result which seems to have been answered, inasmuch as in Paris it has already gone through four editions in the space of about two years. The objects contemplated by phrenology, are, in fact, above all others, calculated to excite popular curiosity.

Since the date when Gall and his coadjutor first promulgated their system, one might think sufficient time had elapsed to allow its truths to be clearly demonstrated or its fallacies fully exposed. As yet, however, it cannot be said that either decision has been positively established, and in this country at least, the number is not great of those who are prepared to express unqualified belief in the system. The author of the manual before us seems likewise under some restraint in the expression of his faith, and sends forth his book without his name. Is this

condition of doubt and uncertainty owing to original error, to the resistance of prejudice, or the want of still further investigation? The perplexities involved in the systems of metaphysics, should certainly dispose us to give a patient consideration to any plan which might possibly tend to lessen them. Those, therefore, we think inexcusable, who from prejudice or any other motive, treat the system of Gall as altogether an idle vision, unworthy of serious consideration. That he has indulged in some extravagancies, his warmest advocates, must we think, admit; but this might naturally be expected from the enthusiasm with which he pursued the subject of his investigations. We would not, however, entirely reject them on this account, since, should it turn out that he has really done less for metaphysics than was anticipated, we must still acknowledge ourselves under considerable obligations for the light he has shed upon physiology and pathological anatomy.

The *Précis* commences with a preliminary discourse of considerable length, in which a glance is afforded of the several systems applied by the most celebrated philosophers, both ancient and modern, to explain the psychology of man. It is well known, that the ancients were in possession of comparatively few facts in relation to the laws of nature, the elements and properties of matter, and especially the more minute divisions of animal organization. Their small stock of positive knowledge was blended with innumerable errors, natural results when fertile imaginations are abandoned to conjecture, a course, which, in their search after the essence of the intellectual faculties, led them into abundant metaphysical difficulties. In regard to modern authorities of most weight, such as Locke, Descartes, Condillac, Kant, &c. he ingenuously acknowledges that they are not absolutely incapable of affording some useful instruction, but at the same time he aims at rendering them entirely nugatory, by advancing as an axiom, that it is impossible to comprehend or explain the moral and intellectual part of man, without having previously studied him physically. Casting aside therefore all abstract notions, he considers anatomy and physiology as alone capable of laying the true foundation of metaphysics, and looks upon it as the crowning merit of Gall, that he was the first who dared to bring the philosophy of man to these conditions.

In tracing out his system of the internal forces or powers which determine and regulate the actions of man, a system intended utterly to subvert all those by which it has been preceded, our author proceeds from the most simple to the most complex, noticing in the first place, those which result immediately from the mechanical or physical action of organs and the properties of the tissues composing them. These are out of the immediate influence of the will, and are called *automatic actions*; among which are, the motions of the heart, arteries, veins, ventricles of the brain, intestines, together with all the functions constituting what is called vegetative life, or life of nutrition.

Immediately above these actions, come that series of sentiments designated by the term necessities, seated principally in the organs of *automatic life*. Hunger, thirst, respiration, &c. belong to this second order. All internal forces of this kind, with which we are acquainted, imperiously oblige us to act upon the external world.

In the third order are the *instincts*, which may be defined, certain unreflect-ed internal forces, impelling to the performance of particular acts necessary to

our existence, which acts, though executed by voluntary motions, are more or less irresistible.

The *passive* functions of sense, should, our author thinks, form a fourth order, and their *active* functions a fifth. As examples of the first he mentions, the impressions of light upon the eyes, sound upon the ears, and cold upon the skin, over which he says we have no more controul than we have over the instincts. But it is different when these impressions induce attention and volition, and involve moral responsibility.

After the *active* functions of sense, may be placed the *voluntary movements*, such as those of the limbs, serving for locomotion and the exercise of other acts connecting us with the external world, through the agency of muscles immediately under cerebral influence.

In the seventh order come the *propensities*, which are internal forces impelling us more or less imperiously towards particular objects, and to view and receive things in a certain manner. These exert a powerful influence over the conduct of man and other animals, but are liable to be greatly modified by the combined agencies of superior faculties, by education, &c. Physical love, attachment, or friendship, the dispositions to quarrel, provide, &c. belong to this order.

In the eighth order, our author places those instincts to which Gall has applied the term *aptitudes industrielles*, exemplified in the skill displayed by the spider in forming its net, as well as that shown by the beaver and by birds in their respective buildings. Such aptitudes he regards as distinct from instincts, properly so called, since they indicate a degree of intelligence.

In the ninth order we have the *intellectual* dispositions or mental faculties, by the agency of which notions and ideas of things are acquired. The combination of these constitutes that particular faculty called *reason*.

Next come the *moral qualities*, which result from the application of the intellectual faculties superior to the direction of the propensities mentioned in the seventh order.

Finally, that no internal cause capable of influencing the determinations of man, may be omitted, two others must be noticed; namely, the preponderance of certain systems of organs over the others, giving rise to what are styled *temperaments*; and those derangements which may take place in the functions of *automatic life*, as well as those in the life of relations. These two new orders of causes are the more efficient, inasmuch as they exert a more immediate and universal influence over all the others. The propriety of constituting a new order out of the derangements of functions, may be fairly questioned.

These, then, our author tells us, are the principal internal causes, which, independent of any such abstractions as pure conceptions, ideas *a priori*, forms of sensibility, &c. concur in the production of our thoughts and actions, and to which may be referred all the differences of humour or character which we remark among men.

He proceeds next with some observations relative to the principal external causes, contributing to the development of man, by exercising over his interior forces a greater or less influence, which he divides into primitive or *natural*, and into secondary or *accidental* causes. Soil, climate, and the aliments constitute the first, government, religion, and philosophy the second.

After this view of the combined forces operating upon man, we shall present a coup d'œil of the laws of the cranium or craniology, a term which our author prefers to either organology or craniology.

We are informed by Gall that he was gradually led by observation into the belief, that the dispositions and character of individuals were in conformity with certain external cerebral developments, and that he was thus induced to found a new physiology of the brain. His new views were, he tells us, subsequently confirmed by the following pathological phenomenon. He had been taught to believe that in dropsy of the brain, a dissolution of its substance took place. This however he could not reconcile with the observation he had made, that the intellectual faculties were not always destroyed in this disease; and supposing, therefore, that there was some mistake in the pathology, he determined to ascertain if possible the truth of the matter.

A hydrocephalic woman, whom he had attended, and who had bequeathed to him her head, furnished an opportunity of satisfying his doubts, and at the same time of demonstrating that the brain is of a fibrous structure in its white part, and not merely a simple agglomeration of globules, as it was formerly considered. This woman, who had preserved the integrity of her intellectual functions till death, had nearly four pints of water in her cranium, and the species of maceration to which the brain had been subjected, allowed Gall to unfold, as it were, the circinvolutions of which it is composed, and at the same time to exhibit to the eyes of his pupils the fibrous texture of their parenchyma.

Pursuing his investigations, he showed subsequently that the gray substance of the brain is of a gelatinous nature, whilst the white consists of very delicate fibres, forming a sort of skin or membrane reflected upon itself, the folds constituting the circinvolutions which we observe upon the surface of the brain; that these circinvolutions are the seat of the superior faculties, by means of which man can compare, associate, and judge of the various impressions he receives, and deduce the consequences.

In establishing the four fundamental principles of his system, Gall laid it down as the first, that the propensities and faculties of man and other animals are innate.

Considering in the next place that the aptitudes, intellectual faculties, and moral qualities are varied by numerous material circumstances, he adopted as a second principle, that the exercise of our instincts, propensities, intellectual faculties, and moral qualities, are subservient to the influence of material and organic conditions.

Convinced by numerous facts furnished by human anatomy and physiology, as well as comparative anatomy, pathology, and natural history, that a greater development of the cerebral organs favours and increases the exercise of the intellectual and moral functions, he laid it down as a third rule, that the brain is the organ of all our instincts, propensities, sentiments, aptitudes, intellectual faculties, and all other moral qualities.

An extension of this last principle, led him to the adoption of a fourth rule, namely, that each of our instincts, propensities, sentiments, talents, and our intellectual and moral faculties, has in the brain a place specially appropriated to it, a determined seat; and that the development of each of these various parts, which form as it were so many little brains or individual organs, manifests itself

upon the exterior surface of the head by signs or visible and palpable prominences, in such a manner, that from the examination of these protuberances by the sight or touch, the particular dispositions and intellectual and moral qualities of every individual may be ascertained. It is this fourth and last principle which has encountered the most incredulity and resistance.

In the exposition of his doctrine, Gall further sets forth, that the faculties increase or diminish, as the organs which are their supposed seats, develop themselves or become stronger or weaker; that they are active and efficient in proportion as the same organs possess more strength and perfection; and in a word, in all their manifestations, offer aberrations and derangements analogous to those we remark in their respective organs. The brain, which in the first period of existence appears almost without consistence throughout, is observed to increase little by little in solidity, acquire a fibrous structure, and enlarge gradually until about the age of forty or forty-five, when it appears to have acquired its full development. In this state of perfection, the organ rests some time, when its circumvolutions begin to sink, and it is observed to diminish insensibly in volume and elasticity, the faculties of which it is the seat losing at the same time their powers. Gall thought he had established as an incontestible fact, that all men who are distinguished for energetic faculties, or superior merit, have the front or some other portion of the head developed to an extraordinary degree, whilst on the contrary, those in whom the cranium offers but little capacity, or exhibits irregularities in the projections, manifest a deficiency in proportion to the degree of deformity. He cites the case of a young man whose forehead had scarcely an inch of elevation above the root of the nose, who manifested only those faculties situated near the eyes, being absolutely incapable of exercising any of those belonging to organs occupying the superior region of the forehead, that is to say, to compare, combine ideas, and form a judgment. In rickets, however, the common effect of which is to produce considerable development and irritation in the brain, the intellectual faculties of children are frequently more acute and active than comports with their age.

According to Gall, each inclination and propensity arises from the action of a single organ. The will, on the contrary, is a decision resulting from the examination and comparison of many motives, that is to say, the sum or result of many forces acting differently. The explanation he gives of the various degrees of extension acquired by the will in the different species of animals, in proportion as they are found endowed with organs of relation and more elevated faculties, is curious. He admits that the action of one organ cannot destroy the impression received through another, nor the action which is the necessary consequence, but pretends that, in proportion as the organs increase in number, the individual, rendered susceptible of a greater number of sensations and ideas, experiences more of those powers which enlighten, and of inducements not to pursue blindly the gratification of this or that desire, or the impulse of a certain propensity. A sort of combat ensues between his inferior and superior faculties, and in proportion as these last have acquired development and received cultivation, they almost always predominate over the brute propensities. With the inferior animals in which the number of organs is very limited, the will is but a simple volition influenced by the irritation of this or that organ. In man, on the contrary, where the plurality of organs reaches its maxi-

num, the excitation falls at the same time upon several organs, when the counteracting forces immediately commence their play. If for example, the destructive instinct provokes to murder, benevolence or theosophy, equally excited, directs the attention of the soul upon other objects, and opposes the accomplishment of the action. Thus in man the superior faculties with which he is endowed, their culture joined with other motives, furnished by education, the laws, religion, &c. constitute a superior power, which examines, compares, and weighs the motives of his actions, and impresses on them a greater or less degree of *morality*.

So far as the osseous conformation of the head is concerned, there are but eight of the bones which particularly interest the student of craniology, namely, those entering directly into the construction of the walls of the cranium, and composing the bony box which contains the brain. These, although usually described by anatomists as of the same form and structure, differ considerably in the eyes of the phrenologist, who observes in the various configurations they present, and the capacity of the space they include, so many indexes of those intellectual differences which exist between individuals. Connected with these investigations, is the important question, whether the brain always fills the cavity of the cranium so exactly, that one may in all cases infer from the form of one, the configuration of the other, or the respective development of its parts. The verity of craniology, in fact, rests upon the condition, that the external surface of the cranium offers precisely the impression of the elevations and depressions which exist on the external surface of the brain. Convinced of the necessity of this exact coincidence, Gall engaged himself to prove, 1st, that the form of the cranium depends upon a centrifugal action exercised upon it by the brain. 2d, That under the ordinary circumstances of life, that is to say, in a healthy state of the brain and of the individual, this viscus fills the cavity of the cranium in such a manner, that the form of this last is always the precise figure of the other. 3d, That no external circumstance, such as the cross positions of the head of the infant during delivery, or subsequent compressions produced by the practice to which some are subjected of carrying burthens upon the head, &c. are capable of altering the form of the cranium, seeing that these accidental circumstances could not resist the permanent and centrifugal action of the brain. Nothing but constant pressure could produce an effect analogous to the deformity which we observe in the cranium of the Caribs and some other people. According to Gall, it is the same with the form of the cranium as with the resemblance traced in the features of the countenance and the forms of other parts of the body; it is determined at the moment of conception, and the child is born with a tendency more or less decided to assume little by little, the appearance of its parents. It is, moreover, difficult to determine the exact time when the definitive development of the brain takes place.

The sinking or contraction of the brain consequent to its period of decline, does not, as some suppose, leave a vacancy between it and the cranium, since the internal table of this sinks in the same gradual manner, and continues to mould itself exactly over the convolutions, excepting only, that as the external table does not change, a spongy substance is deposited in the spaces between the lamina. Thus the bones of the cranium become more thick and spongy than at other periods of life. Gall thought that he had likewise proved by observa-

tions made upon the human species, together with direct experiments upon animals, that misery, fasting, abstinence, bad treatment, and above all, food of a bad quality, or given in too small quantities, produce the same effects as old age, that is to say, a drying of the nervous system and subsidence of the brain, followed by a failure of the corporeal forces, as well as of the intellectual faculties and moral qualities, which may explain the degradation that marks the conditions of certain people.

It would be altogether a vain task to attempt to point out the locality of each particular organ without the assistance of plates. For this reason we shall pass over organology, properly so called, and conclude this notice with a short biographical and phrenological account of the founder of the science furnished by the treatise before us.

Jean-Joseph Gall was born in 1758, at Tiesenbrunn, in Wurtemburgh, and died at Mont-Rouge, near Paris, in the summer of 1829. His father, who was a merchant, sent him whilst yet very young, to one of his uncles in the duchy of Baden, to commence his education. From this place Gall went to Strasbourgh for the purpose of studying medicine, then to Vienna where he assumed the garb of the physician, which profession he practised up to 1805, when he left the last named city to return to his father, who had a desire to see him previous to his death, and also to make a tour in the north of Germany, where he commenced teaching his new doctrine. Finally he arrived at Paris in 1808, where he continued till his death to devote himself to the practice of medicine, and to promulgate the results of his laborious researches.

From an attentive examination of the head of this celebrated man, who for intellectual capacity may be ranked with the first of the age, the author of the treatise before us, drew the following indications, namely:—among the organs most developed may be enumerated all those situated on the anterior and superior parts of the forehead, such as the spirit of induction, that of wit, the faculty of abstracting and generalizing, but above all, benevolence. On the crown and sides of the head, there were also strong developments of firmness or perseverance, caution and cunning, or rather finesse and ingenuity. The accusation of duplicity with which he had been charged, our author regards as unfounded. The sexual appetite was strongly marked upon the occiput, whilst the anterior and inferior parts of the forehead exhibited small indications of the memory of facts and philology. Finally, colour, music, mathematics, mechanics, and especially poetry, were very faint, and this last sense to such a degree, that he actually had an antipathy for versification. All the other organs were in a state of ordinary development. That of locality, which had appeared very prominent, was only a contraction of the skin, produced by the habit of thinking.

To this cranioscopy must be added, a strong constitution, a degree of corpulence, and a stature considerably over the mean height. His movements displayed more gravity and energy than lightness and promptitude, his looks much fixedness and penetration. His countenance was sometimes marked with care, and had generally an expression rather of seriousness than gaiety. Calm and circumspect, he was always free from blustering and foolish mirth. A sarcastic smile mingled with an air of irony, sometimes sprung from his mouth and the ~~alz~~ of the nose. He had a superb forehead, and a chin slightly prominent, full

and firm, a clear skin and fresh complexion, thick lips, and passions more profound than violent. The expression of thought was always clear, precise, often picturesque, but sometimes scornful. His lectures ordinarily consisted of a simple exposition of facts, but in conversation and discussion, interrogation and irony were most conspicuous. The motions of his extremities and attitudes of his body were very negligent, but the tone of his voice, accent, movements of the head and physiognomy were very expressive. In fine, a certain fund of German good nature, redeemed some rather rude expressions of humour, which were neither sufficiently mild nor innocent not to produce a slight irritation.

The cranium after death having been carefully separated with a saw from above the eyelids, was found of great thickness, (about three lines,) as well as hardness. Between the dura mater and pia mater there were about two ounces of a bloody matter, with some exuberances, one of which was about the size of a pea. The cerebral substance was firm and nearly in a natural condition, although during his illness it had been suspected that the brain was the organ chiefly affected. The skull cap and brain having been removed, weighed together, four pounds, one drachm and a half; the skull cap itself weighed one pound, five ounces, one drachm. Thus the proper weight of the brain alone, when disengaged from its meninges, was two pounds, eleven ounces, and half a drachm, a weight indicating a brain, the dimensions of which are very near the maximum they ever attain.

From all this our author remarks, "it is evident, that in the sense which he attached to the word philosophy, Gall had a head eminently philosophic. He was in fact skilful in distinguishing prejudices from eternal truths. He possessed an astonishing perspicacity for penetrating into things, and exhibiting them in a point of view fruitful in useful resources. But in my opinion he wanted several faculties to constitute a mind of the order of Descartes, of Newton, of Leibnitz, of Wolf, &c. perhaps even of Bacon. With him, in fact, the faculties of causality and comparison were well developed, but this was not sufficient to enable him to arrive at a system of philosophy at once severe and positive, which embraced at the same time every thing relative to man, and the chain of admirable phenomena which constituted the moral and physical order of the universe. Many organs, especially those of the mathematics, arts, localities, &c. were too weak in him to admit of his elevation to such a height. But he had the organization which qualified him to lay close hold on human nature and lay the foundation of the true philosophy of man. Many others, with fewer titles to our gratitude, have covered themselves with immortal glory." G. E.

ART. XVIII. *System der Vergleichenden Anatomie.* Von J. F. MECKEL, Professor der Medicin, Anatomie und Physiologie, zu Halle, &c. &c. Erster Band Allgemeine Anatomie, Halle, 1821. Zweiter, dritter, und vierter Band, Besondere Anatomie, enthaltend die Skelettlehre, die Muskellehre und die Verdauungslehre Halle, 1824-25-28 and 29.

A System of Comparative Anatomy. By J. F. MECKEL, Professor of Anatomy, Medicine, and Physiology in the University of Halle, &c.

The French translation of the Comparative Anatomy of Professor Meckel, now in the course of publication at Paris, has been already announced to the

American public through the pages of this Journal: the first, second, and third volumes, including the whole of the translation yet published, having been already noticed in some of the preceding numbers. The German edition, it will be seen by a reference to the title affixed above, is considerably in advance of the French of MM. Reister and Sanson; the fifth volume having made its appearance at Halle in the course of the last year. In making this announcement, it is not our intention to examine the first three volumes, the contents of which have been already announced to our readers, but to notice the materials contained in the fourth and fifth.

The fourth volume is taken up in the consideration of the muscular system, which is examined in the different classes of animals, commencing first with the echinoderma, and considering it successively in the annelides insects, arachnides, crustacea, molusca, cephalopodes, fish, amphibia, and mammalia.

We regret that we cannot follow the author through the interesting details contained in this volume, every part of which bears the impress of that truly philosophic spirit which pervades all the literary labours of Professor Meckel. It is impossible to read this exposition of the muscular system, in the different classes and orders of animals, without finding ourselves carried away, in a spirit of admiration, at the wonderful adaptation of its several parts, to the wants and conditions of the several beings, which it is destined to subserve.

In the fifth volume we have an elaborate examination of the digestive system extended through the several classes and orders of animals in nearly the order pointed out above. Here we have a most satisfactory exposition of the instruments of digestion in all their diversified forms and modifications, from their simple arrangement in the humblest zoophyte, to the complex disposition which they present in the higher orders of the mammalia. In all we find an arrangement of parts adapted as well to the characters of the food upon which the animal subsists, as the nature of its habitation, and external relations. In every part of this volume we find matter which, with the anatomist and physiologist, possesses the highest degree of interest, and is well calculated to establish the clearest conviction of the immense advantages to be derived from the study of comparative anatomy. We should be pleased to make copious extracts from the volume in question, convinced as we are of its great merit, but this pleasure we shall be obliged to forego, at least for the present, not without the hope, however, that it may yet be in our power, on some future occasion, to furnish our readers with a more satisfactory account of the comparative anatomy of Professor Meckel. Our commendations are, fortunately, not necessary to ensure a due appreciation of its merits. If in France, where they have already the proud monuments, in comparative anatomy, built up by the geniuses of a Vicq d'Azyr, a Daubenton, a Cuvier, and a Blainville, this treatise should be considered worthy of a translation, may we not hope that the English language, in which we possess no good treatise on the subject, may become enriched by a transformation of the work in question into an English dress? Such an event is highly desirable, and we should be much pleased to see some competent individual occupied in so laudable an undertaking.

The remaining volumes are to be completed at as early a period as possible; and if we may judge from the character of those already published, we have

no hesitation in affirming, that it will constitute, by far, the ablest treatise on comparative anatomy contained in any language. E. G.

XIX. *Encyclopädisches Wörterbuch der Medicinischen Wissenschaften*. Herausgegeben von den Professoren der Medicinischen Facultät zu Berlin: C. F. v. GHAEFF, C. W. HUFELAND, H. F. LINK, K. A. RUDOLPHI, E. v. SIEBOLD. Zweiter Band. (Ahnung—Antimonium.) Berlin, 1828.

The first volume of this medical Encyclopædia has been already noticed in a preceding number of this Journal, and as we propose to announce those which are to follow, to our readers, as soon as they are received, in accordance with this plan, we avail ourselves of the earliest opportunity of calling their attention to the second volume, which made its appearance at Berlin, in 1828. It extends from the word *Ahnung*, (*prae sagium*, *divinatio*), to *Antimonium*, and consequently embraces a wide range of interesting topics, which are for the most part treated with great ability. It must be manifest, that to comprise the leading principles which appertain to the several departments of medical science, within the small compass of twenty-five volumes, most of the articles must be short, otherwise numerous topics, all possessing more or less interest, would be entirely excluded. We accordingly find, that with but few exceptions, the articles contained in this volume possess considerable brevity. This is, indeed, carried in some cases to such an extent, as to amount to a fault. Upon a hasty examination, the articles which strike us as most elaborate are, *Aller*, (*Aetas*), by Professor Rudolphi; *Amenorrhœa*, by Professor Berndt; *Amaurosis*, Professor Benedict of Breslau; *Amputatio*, Dr. Grossheim of Berlin; *Anastomosis* and *Anatomie*, Professor Rudolphi; *Aneurisma*, Dr. Sommer of Frier; *Angiectasie*, Dr. Sommer; *Angina*, Dr. Sachse; and *Anthropologie*, Professor Rudolphi, &c. In designating these articles, it is far from our wish to detract from the others; we have selected them partly on account of their greater length, while we are conscious, that there are some of less extent, which possess even more merit, than some of those which have been designated. The article on *angina* is altogether too extensive, and has been made to encroach upon space which should have been allotted to more important matter: it occupies one hundred and thirty-five pages, almost one-fourth of the entire volume. We are disposed, however, to overlook these trifling faults, as the general literary execution of the volume is highly respectable. We hope, therefore, that the publication of the succeeding volumes may proceed without interruption; and we feel assured, that when completed, the whole work will constitute a highly respectable monument of German medical literature. In the arduous, but praiseworthy enterprise of editing and publishing medical encyclopædias, the French were the first to lead the way; and so fully have they felt the benefit of such works, that in the space of a few years, no less than three works of the kind have been completed at Paris, and a fourth is at present in progress. The Germans have, with a commendable spirit, followed the example; and may we not hope, that the English and Americans will next be stimulated to collect and digest their medical literature in a similar manner? E. G.

XX. *Elemente der Allgemeinen Anatomie in Verbindung mit der Allgemeinen Zergliederungskunst.* Von Dr. M. J. WEBER, Professor und Prosector zu Bonn, Mehrerer Gelehrten Gesellschaften Mitglieder, &c. Mit Steintafeln, Bonn, 1826.

Elemente der Speciellen Anatomie in Verbindung mit der Speciellen Zergliederungskunst. Von Dr. M. J. WEBER, &c. Zweiter theil Muskellehre, Bonn, 1828.

This is a treatise upon general and special anatomy, in connexion with a system of dissection, in which are contained rules for dissecting the different parts of the human body.

Professor Weber divides dissection into general and special, according as it has for its object the investigation of the characters of the several tissues of the body, (*Histography*,) or the structure, form, relations, &c. of the different organs, (*Morphography*, or *Topography*,) of the human body.

Some difference of opinion has existed relative to the time at which the anatomical student should commence his dissections, some advising that he should have previously attended one course of anatomical lectures, while others recommend that he should begin to dissect as early as possible. There can be no doubt that the student can profit more by dissection after he has heard a course of lectures, and has acquired, from the demonstrations of the professor, some knowledge of the parts which he has to expose, than if he were to commence without this preliminary information. Yet when we reflect upon the short space of time allotted to a course of medical studies, and that anatomical pursuits can only be attended to during the winter, we cannot help agreeing with the author, that dissections should be attended to from the commencement, and throughout the whole period of medical studies. We can speak upon the subject from considerable experience, and we are convinced, from the result of our own observations, that the best plan the student can adopt, is, as soon as the professor has described any particular part, as for example, the muscles, the arteries, viscera, &c. to dissect them with attention, while the observations he has heard, are still fresh in his mind. We, moreover, concur fully with the author, relative to the impropriety of the student attempting to prepare all the parts in the course of a single winter. His time is so much occupied in attendance upon lectures and other duties, inseparable from his course of studies, that it is impossible for him to accomplish so much; and by attempting it, he only confuses his mind, and completely fails in acquiring that information which it is so necessary he should possess. A much better plan would be, for him to divide the objects of his research, so as to have a portion allotted for each winter session. If the arrangements of our schools were such as to require three years attendance on lectures, (which we regret is not the case,) we would recommend that during the first winter, the student should dissect the muscles, ligaments, vessels, organs of digestion, respiration, urine, and generation; during the second, the brain, nerves, and organs of sense; and during the third winter, he should attend to topographical or surgical anatomy, dissecting the several parts of which the different regions of the body are composed, in the order in which they present themselves, and observing, with attention, their mutual relations.

He should, moreover, during the third winter, direct his attention to minute structure, or to the properties of the several tissues of which the entire organization is composed. Professor Weber has advised that this latter subject should be attended to first, by the student, even before he proceeds to dissect the muscles, or any other part of the body, but we feel assured, that there are but a small number of students, who at so early a period of their studies, would be qualified to conduct such investigations. But while we recommend general anatomy, as an object of attention during the last session, we are not insensible of the immense advantage the student would derive, from an earlier acquaintance with the properties of the different tissues.

The author goes on to speak of the advantages to be derived from dissection, and of the best means of realizing them; of the necessary instruments and apparatus to be possessed by the dissector, and finally, of the most successful means of preserving the health against the injurious consequences which arise from the influence of the unwholesome atmosphere of the dissecting room, and from wounds accidentally received in dissection. We cannot follow him through all these details, in which it will be sufficient to observe that his directions are judicious. We will merely subjoin, that amongst other means in common use to counteract the dangerous tendency of dissection wounds, he speaks of suction, first recommended by our respected collaborator, Dr. J. D. Godman, and subjoins, "that by comparing the result of the last sessions, during which this practice was adopted, with those obtained before, the good effects of suction were rendered very conspicuous."

Dr. Weber next enters into some considerations relative to the classification of the tissues, in which he objects to the arrangements made by Bichat, Walther, Dupuytren, Meckel, Rudolphi, Mayer, and Heusinger, and proposes one which he thinks better. According to this arrangement, we have nine tissues, of which number, seven are simple, and two compound. The seven simple tissues are, the cellular, fibrous, cartilaginous, osseous, muscular, nervous, and horny: the two complex tissues, or rather systems, are, the vascular and glandular. Each of these are divided and subdivided in such a manner as to make them include all the different modifications of the organization, and without greater inconsistency than is usually met with in all similar attempts at classification. We do not think, however, that the serous tissues should be made to constitute a part of the cellular, as they are in Dr. Weber's arrangement.

The author makes a brief, but satisfactory description of the properties of each of the tissues which have been enumerated, and at the conclusion of each subjoins the best means of dissecting or examining them. These directions are calculated to be of considerable advantage to the student, but do not contain any thing new.

The second volume of Professor Weber's work is devoted to the description of the muscles and ligaments. In looking over it, we find that the descriptions are generally well drawn up; and the directions which are given for the preparation of the muscles are good, and cannot fail to afford great assistance to students, for whom they were intended. The third volume, or second part of the special anatomy, containing the angiology and splanchnology is announced by the author, as in press, and it is doubtless published before this time. We think

the whole work, as far as we have yet seen it, is well suited to the dissecting room, and that it cannot fail to prove a valuable acquisition to the student of anatomy.

E. G.

ART. XXI. *Opusculi di Chirurgia*. Di ANTONIO SCARPA, Professore Emerito, e Direttore della Facoltà Medica della I. R. Università di Pavia, Cavaliere dell'insigne ordine Austriaco di Leopoldo, &c. &c. 2 vol. fol. Pavia, 1825.

The work, the title of which we have here announced, is made up of memoirs, composed by the author at different times, most of which have been already before the public. The object of the present publication is therefore to arrange and embody them, so as to render them more extensively useful, by facilitating their circulation. The first volume, of 190 pages, folio, and six highly finished copperplates, treats upon the following subjects:—1. A Memoir on Scirrhus and Cancer. 2. A Memoir on the Cutting Gorget of Hawkins. 3. A Note on Lithotomy. 4. A Memoir on the High Operation for Stone. 5. A Letter to Professor Maunoir, on the Recto-Vesical Operation for Stone. 6. A Collection of Cases relative to the same operation. 7. An Examination of the third Memoir of Professor Vacca, on the Recto-Vesical Operation. 8. A Note on the disadvantages of the same operation, when compared to the lateral operation. 9. A Memoir on Hydrocele of the Spermatic Cord. 10. A Memoir on Ascites taking place during Pregnancy. 11. Practical Observations on the advantages of the new method of practising the operation of paracentesis, in cases of Ascites succeeding Pregnancy. 12. Observations on the same operation, compared to that used by Mr. Langstaff. In the second volume, of 200 pages, and six elegant plates, engraved on copper by the celebrated Anduloni, the following subjects are treated: 1. Perinæal hernia. 2. The application of ligatures to the principal arteries. 3. Temporary ligature of the principal arteries. 4. The most speedy means of securing and obliterating the principal arteries. 5. The operation for aneurism. 6. Cataract and artificial pupil. 7. Rare cases in surgery. 8. An extraordinary accumulation of milk in the mamme. 9. Extraneous bodies introduced within the rectum. 10. A varicose sanguineous tumour of the upper lip. 11. A varicose sanguineous tumour of the bony palate. 12. Aneurism of the arch of the aorta, with erosion of the first rib and the sternum.

We have been thus particular in enumerating the contents of these volumes, as well on account of their great value, as from a desire to enable our readers to know where they can refer to the several memoirs and observations of the distinguished author, which have become exceedingly scarce in their detached forms. We would sincerely recommend every cultivator of surgical science to carefully study these memoirs. Like every thing which has come from the pen of the now venerable and renowned professor, they every where present the strongest evidences of great intellect, high attainments, extensive research, and excellent practical judgment and discrimination. There is especially one character presented by the memoirs in question, which we admire in all the author's compositions. Instead of being, like too many of our time, overanxious to brandish forth every thing which may appear novel, as a new discovery, he examines patiently in the first place what has been done by his predecessors

and cotemporaries, and by comparing their observations, with the result of his own experience, he arrives at such conclusions, as facts alone can warrant.

He perceived and pointed out, at an early period, the numerous disadvantages attending the recto-vesicular operation for stone, so highly commended by M. Sanson, and Professor Vacca, and to the very able manner in which he has portrayed these disadvantages, in the volumes before us, and the bad success of the operation itself must be mainly attributed the disrepute into which it has already fallen, even though only a few years have elapsed since it was first recommended. We had occasion, in 1825-26, to see the justice of some of Professor Scarpa's objections fully verified. We had then an opportunity of seeing M. Sanson perform the operation several times at Hôtel Dieu, but although the stone was extracted with great ease, and without occasioning much constitutional suffering, either immediate or consecutive, and although some of the patients were cured, without much difficulty, yet in several cases a permanent recto-vesical fistula was the consequence, which no treatment could heal. This is an objection which we think must always prevent the operation in question from being often performed, and will, doubtless, when taken in connexion with others alleged by our author, ensure its ultimate neglect.

To enable our readers to form an estimate of the plates appended to these two volumes, it is only necessary to inform them that they are executed by Anduloni, who has already acquired so much reputation by the highly finished and splendid engavings which accompany the other publications of Professor Scarpa. Most of the subjects are represented of their natural dimensions, and with a degree of clearness and accuracy which we think no other engraver of anatomical subjects has ever attained. We sincerely trust, that the author may be yet spared, although he has already reached a good old age, to publish new editions of his other works, many of which are exceedingly rare. E. G.

XXII. *Nosologie und Therapie der Chirurgischen Krankheiten in Verbindung mit der Beschreibung der Chirurgischen Operationen; oder gesammte ausführliche Chirurgie für praktische Aerzte und Wundärzte.* Von C. J. LANGENBECK, Ordeutlichen Prof. der Anatomie und Chirurgie, &c. &c. Erster Band mit drey Kupfertafeln Göt. I. 1822, pp. 704. zweiter Band drey Kupfertafeln Göt. 1823, pp. 984, dritter Band mit sieben Kup. Göt. 1825, pp. 920.

When we reflect upon the numerous and rapid improvements which the Germans are daily making in the different departments of medicine, it is to us matter of astonishment that so little should be known of their medical literature, on this side the water. Indeed, with the exception of the names of a few of their most distinguished authors, it may be justly affirmed that we scarcely know any thing of the medical character of our indefatigable brethren of the north, and yet it is an incontestible truth, that they have within a few years contributed more to the advancement of some of the departments of medical science, especially anatomy and physiology, than any other nation. Nor have they been behindhand in surgery. While England can boast of her Hunter, her Bells, her Abernethy, and her Cooper, France of her Desault, her Dupuytren, her Boyer, Richerand, and Lisfranc, Germany has full reason to be proud of the names and reputation of a Graefe, a Rust, a Laugenbeck, a

Klein, a Zang, a Seibold, and a host of others, whose labours have enriched the science, and established for German surgery an exalted and imperishable reputation.

We have been induced to make these remarks from the circumstance, that although the work of Professor Langenbeck, one of the most distinguished of modern surgeons, the title of which is placed at the head of this notice, has been before the public for some time, it is probably unknown in the United States. Convinced, as we are, of its high merits, we cannot avoid regretting that so little attention is paid to German medical literature, and that our numerous medical readers, who are unable to peruse works of merit in a foreign language, should not have these difficulties removed by the laudable enterprize of translators and publishers. Works, altogether worthy to be transferred into our language, are almost daily issuing from foreign presses, which, for want of the enterprize to which we have adverted, must remain, for the most part, unknown to the American public, except through the scanty gleanings which are contained in the journal.

Only three volumes of the Surgical Nosology and Therapeutics of Professor Langenbeck have as yet reached us, though the whole work is to consist of nine, of which an entire volume is to be devoted to the diseases of the eye, and another to those of the bones. Each volume is accompanied with copperplate engravings, representing the anatomy, diseases, instruments, operations, dressings, &c. In addition to these, may be advantageously taken in connexion with the work, the splendid anatomical engravings of the author, which embrace the entire anatomy of the human body. The configuration and structure of the brain are represented in forty copperplate engravings. The plates of the arteries and nerves are also done on copper, and are of a large size, one of them being four feet in length.

The first volume of the work is taken up with the consideration of the characters of inflammation, which are divided into general and special, implying by the latter, the numerous modifications presented by the process, as it attacks the different tissues. This division we consider highly advantageous, inasmuch as diseases are always modified by the character of the structures which they implicate, and correct views can only be formed by the application of general anatomy, to the elucidation of pathology. It is, in consequence of the adoption of this course of investigation, that pathological science has been brought to its present improved condition, an elevation which it owes to the discoveries made, and the impulse given, by the genius of Bichat. It therefore affords us much pleasure to see so distinguished an individual as Professor Langenbeck availing himself of the lights of general anatomy, to elucidate the principles of surgical pathology: a course which has been subsequently followed with great success by Roche and Sanson, Gendrin, and others. Such examples, we feel the proud conviction, will always do more to maintain the high claims of general anatomy, and to establish a conviction of its important influence, than can ever be effected towards destroying them, by volumes of such empty declamation, as that uttered by a late writer,* who has not only pronounced general anatomy to consist of unmeaning jargon, but has declared the most philosophic work on ana-

* Dr. Knox.—Preface to his translation of Cloquet's Anatomy.

tomy,* that has appeared in this, or any other age, as little better than an assemblage of nonsense and absurdities.

The observations on inflammation in general, are drawn up with much ability, and every where bear marks of the excellent critical acumen, with which the author has long since shown himself richly endowed. The general characters are not only portrayed with masterly clearness, but the principal doctrines upon the subject are criticized with great candour and judgment. It is by studying the characters of healthy and diseased structure, by investigating their functions, as well in health as disease; or in other words, by making anatomy, physiology, and pathology, advance hand in hand, and mutually support each other, that our author has been led to establish such principles, as are proper to direct with a prospect of success, the ordinary therapeutic procedures.

"When," observes he, "my attachment to anatomical pursuits shall subside, my lectures, as well as my practice, will lose all their interest. This is, indeed, an event that can never take place; for when I look forward to a good old age, I feel the consolation, that when my eyes and hands render me an invalid in the practice of surgery, anatomy will furnish a substitute."

Professor Langenbeck makes the following division of inflammation, which we give without comment:—

1. Primitive, simple, or acute inflammation.—2. Secondary, or symptomatic inflammation.—3. Hypersthenic.—4. Asthenic.—5. Paralytic, or typhus.—6. Specific.—7. Chronic.—8. Metastatic.—9. Inflammation of the several tissues.

These several varieties of the process are examined in succession, their numerous modifications are minutely detailed, and finally, the principles of practice are carefully laid down. In considering the characters of inflammation, as it affects the different tissues, our author commences with the skin, and passes the subject successively in review, as it implicates the mucous, serous, fibrous, lymphatic, nervous, arterial, and venous systems, and under each head, he not only points out the pathological characters of the disease, but also the rules of treatment. The first volume is concluded with some very sensible observations relative to the subject of blood-letting, and the usual rules to be observed in practising it.

In the second volume we have an exposition of the conditions usually expressed under the appellation of termination of inflammation, as suppuration, ulceration, and mortification. The termination by effusion is considered under the head of dropsy, and that by induration under the head of tumours, or new developments.

Under the first head, or that of suppuration, the author very correctly observes, that the suppurative process may be developed under three forms, viz.: 1. In the substance of the tissues, giving rise to a cavity more or less extensive, filled with purulent matter, constituting what is called an abscess. 2. Upon the solution of a surface of continuity, which is, thereby, made to secrete pus, and to assume a condition which renders it impossible to heal it in any other manner than by the second intention. 3. From any of the natural surfaces; as mucous, serous, &c. which instead of their natural secretions, are made to elaborate pus. The considerations which have reference to the second form of

* Meckel. *Manuel d'Anatomic.*

suppuration, are transferred to the third volume under the head of wounds. The first form, or that of abscess, is ably examined, and the several varieties of the disease are carefully distinguished from each other. They are, 1, the acute or phlegmonous abscess; 2, chronic; 3, topical or local, not depending upon any constitutional cause; 4, constitutional; 5, metastatic; 6, superficial; 7, profound; 8, external; and 9, internal. Some of these distinctions we are disposed to consider superfluous, inasmuch as they do not express any fundamental difference, but merely some accidental circumstances, of but trifling consequence. The remaining part of the volume is taken up in the consideration of the subjects of ulceration and gangrene, both of which are treated in an able manner.

The third volume is devoted to the consideration of wounds, in connexion with which, are treated in a general manner, the subjects of hæmorrhage, aneurisms, &c. We regret that we are unable to enter upon an analysis of this part of the work. We have, however, no hesitation in affirming, that it contains a better digest of the doctrines and practice which appertain to those subjects, than any work we have seen.

The plates which are annexed to the work are small, but are well calculated to convey a proper idea of the subject which they are intended to represent. We have, however, observed already, that the anatomical plates of the author, may be taken in connexion with the work in question, by doing which, the student would have an excellent system of surgical anatomy and surgery united.

Having expressed ourselves in very favourable terms of Professor Langenbeck's work, we cannot dismiss the subject, without expressing the hope that the remaining volumes may soon make their appearance, and that the whole work may be completed in the highly creditable manner of the three first volumes.

E. G.

XXIII. *Anatomie Pathologique du Corps Humain, ou Descriptions avec Figures Lithographiées, des diverses Altérations Morbides dont le Corps Humain est susceptible.* Par J. CRUVEILLIER, Professeur d'Anatomie à la Faculté de Médecine de Paris, &c. &c. Fol. Paris, 1828.

The first five livraisons of this work are contained in the fasciculus before us, which according to the prospectus is about one-eighth of the whole. The livraisons appear every six weeks, and cost nine francs each, about two dollars of our currency; consequently, when the work is complete, it will cost eighty dollars. Considering the beauty of the plates, and their whole number, (240 when the work shall be finished,) the goodness of the paper, and the style of the press-work, this production of Mr. Cruveilhier is recommended by an extraordinary cheapness, such as would enable almost any medical man who is attaching himself to the study of pathological anatomy, to purchase it.

Good plates in anatomy are of the greatest service to the student and practitioner at every stage of his connexion with medicine; where subjects however are in abundance, they may be dispensed with in the study of the normal condition of the human body, but for pathological anatomy they are an absolute necessity. A description of a morbid alteration, however exact its language may be, generally fails to impress upon the reader the precise idea held by the writer, and if there should have been no common preparatory standard in plates

or morbid dissections, the obscurity is still further increased. Moreover there are many morbid alterations of an uncommon kind, the traits of which, owing to the imperfection of the human memory, would be lost even to the observers of them, without an accurate painting; how much more difficult then would it be to communicate to others an idea of them by the mere abstractions of language. Mr. C. has stated with great justness in his introduction, that a faithful delineation of forms, colour, relative situation, dimensions, and details of texture augmented by optical instruments, present a picture as eternal as nature, and protected from the vacillation of systems. It reproduces incessantly the original image, recalls to one person what he has already seen, and teaches another what he did not understand, dispenses with abstruse lectures, and leaves upon the mind deep and durable impressions.

The fasciculus of this work under our consideration, contains plates representing some important diseases of the placenta and uterus, of the ganglionic nerves, of the kidneys, of the spleen, intestines, lungs, heart, testicle, in fine, of the several viscera contained in the abdomen, thorax, and cranium.

At this early period, while seven-eighths are yet to appear, it would be objectionable to enter further into an analysis of its merits and pretensions. It may therefore be sufficient to state, that from the opportunities known to be in reach of the author—from his preceding contributions to the profession—and from the style of execution, and the subjects introduced into the five first livraisons, this work promises to be of the greatest utility, and comes recommended to us in the strongest and most unequivocal manner. W. E. H.

XXIV. *Address to the Community on the Necessity of Legalizing the Study of Anatomy.* By order of the Massachusetts Medical Society. Boston, 1829, pp. 27.

We have read with much pleasure this document, and find in it the most satisfactory reasons in support of the object stated. It has often been a matter of astonishment to us, that with the sound practical sense which is exhibited in the whole organization of society in New England, that with the efforts which are continually made there, to improve the moral and physical comforts of its inhabitants, laws of the most oppressive and unreasonable kind hang like an incubus over the study of anatomy, and by their proscriptive violence, and frequent application, close this only avenue to sound medical knowledge. We trust, however, from the fairness and strength of the present appeal, and the bold and manly way in which it has been taken up in the report of a committee of the Massachusetts legislature, that a new order of things is about to commence, that vulgar and ignorant prejudices will yield to the cause of humanity and of science, and that by the freedom with which practical anatomy may hereafter be cultivated in New England, the vigorous and attractive state of her social institutions will be completed.

We are the more pleased with this Address because it is a candid and open exposition of difficulties, and of the means of relieving them. It is a statement directly to the point, and must have weight if common sense and common philanthropy are to be arbiters, and we trust that there is too much of both in the community to which the argument is addressed, for it to be controverted or passed over.

The Address, after some general observations on the indispensable nature of anatomy to the accomplished physician, which are sufficiently familiar to every medical man, goes on to quote several striking instances of the loss of life from patients falling into incompetent hands. An aged practitioner reports more than a hundred persons, under his own observation, dying from strangulated hernia, and the question is very naturally asked, "how great must have been the number in the whole of New England, who perished miserably from the same cause?" There are also several interesting cases given, somewhat at large, of death from the accidental wounding of large arteries by the ordinary implements of husbandry, and other instruments. There is much good sense in making these statements, because positive instances of evil, are always more readily comprehended than mere abstract argument, and where a question of human misery is concerned, our sympathies are inevitably excited. It has been our misfortune to witness several of those horrors in the practice of surgery, arising from an ignorance of anatomy on the part of operators. If there were no other object in view than to stigmatise an individual, charity would induce us to suppress the narrative, but as an important argument is in question, it is proper to adduce it. During the brilliant campaign of our army, in 1814, on the Niagara frontier, many cases of severe wounds required surgical operations. A surgeon occupying a distinguished station through his commission, but certainly not through any professional qualification, was a chief operator. We saw this person, in an amputation of the thigh, fail to cut through the great sciatic nerve; after the bone was sawed through, the limb still hung on by this nerve; ignorant of its nature, he made a plunge at it with his saw, the screams of the poor soldier attested the concentrated agony of a thousand operations, until the operator was implored by an assistant to desist and to use a knife. A captive officer of the enemy was wounded in the forearm, by a musket ball, and from the division of an artery, the bleeding was profuse; several days were spent in attempting to arrest it with a tourniquet. The pressure of the latter at length caused great tumefaction of the limb, and threatened mortification. The same operator instead of taking up the main artery above the wound, amputated the limb, and the operation being performed while it was in a state of inflammation, the pain was immeasurably augmented, and the poor fellow finally fell a victim to the want of scientific skill. Such are the lamentable and shocking consequences of entrusting the lives of people to the uneducated in anatomy.

The Address combats with success the arguments against carrying on dissections in New England. One of them is of a very singular kind, for it proposes to the student to go elsewhere for his anatomy, to New York, Philadelphia, or Paris, no matter where. This is certainly very unjust and unreasonable; if dissections are in themselves improper, it amounts to a proposition to impose the evil upon other places, for the benefit of New England; a notion so selfish that we can scarcely believe it to be entertained by any conscientious individual, let his prejudices be what they may. The proposition also presumes upon what is contrary to the fact, that every student of medicine is in circumstances sufficiently easy to enable him to encounter the expense of a foreign education.

The remedy for the want of subjects, proposed by the Address, appears to us both fair, humane, and sufficiently deferential to the existing prejudices of so-

ciety. In every populous community, persons are found who have no ties of consanguinity, relationship, or friendship, and it is generally admitted that the violence done by a dissection is not to the subject of it, but to living individuals who are near connexions. But if the latter do not exist, the only consequence of a dissection is the exchanging of the loathsome putrefaction of the grave, for the nice and attractive separation of the constituents of the body by an anatomist. We believe that there are few persons who upon seeing a dead body in a state of putrefaction would not think the latter by far the more horrible mode of man's returning to the elements which compose him, and would not compromise for something less humiliating and less disgusting. Burning, embalming, in short any of the modes resorted to by nations, depending upon their peculiar customs, are, when philosophically considered, preferable to our going through the same process of decomposition, which marks the end of the lower orders of animals, and yet the prejudices of education make us close our understandings to one of the most obvious laws of nature.

To return, however, to the remedy. It proposes that the legal restrictions upon dissections shall not apply in the case of individuals who have no living relatives or friends to deplore their loss, and to bestow upon them the rights of sepulture, and who have been kept at the public expense. This proposition, though sound, is delicate—it draws an obnoxious line between the poor and the rich, and is therefore liable to popular objections. Here lies the difficulty, and to make acceptable so practical a distinction as this, in a country where all persons are theoretically equal, requires a casuistry of no small acuteness and ability. It appears to us, that the best way of avoiding this dilemma, would be, to declare by a legislative enactment, what is admitted both by reason and revelation, that no dead body is intrinsically of any value, for the fiat is irrevocable, “dust thou art, and unto dust thou shalt return;” that relatives and friends, however, possess a right to the remains of their dead, which right they may exercise in any way they think proper, and be secured in; but that in the case of individuals not connected with the living by cherished associations, their bodies are to be estimated only by the rule of positive value, and that if a grievance can be proved to have been suffered by any one through their dissection, the party may obtain equivalent damages, by law or otherwise.

A regulation of this kind would be just and would provide sufficiently for the case in point; but an abstract and sweeping legislation on dead bodies appears to us absurd, because it makes of consequence a mass of matter which the laws of nature sufficiently prove must return rapidly, sometimes in a fortnight or less, to the elements which compose it. If a wrong, then, be suffered by a dissection, this wrong is inflicted upon the feelings only of the living who were nearly allied to the dead, but where from the want of relatives and friends it is not possible for such feelings to exist, it is obviously absurd to make in point of law the latter case a parallel with the former. Our meaning is that the sanctity of the tomb should be protected by sufficient laws, but that in the case of a prosecution for violating it, it should be made to appear that there is an aggrieved party, and a more substantial plaintiff than the general and indefinite prejudices of society. The real esteem felt for the dead would then show itself by the persons actually interested, coming forward to spend their time and money in the prosecution.

If things were put upon such a footing, society would soon adjust itself upon this point of right, as it does upon all others—and that knowledge of anatomy for which they look in their physicians, and which is indispensable to their comfort, would be always attainable. We have no doubt that a community is frequently made by the laws, as they exist, to perform a part in a prosecution for dissection, which part is diametrically opposed to the sentiments of a large majority. It is quite time that an art so important as anatomy to the interests of humanity should be properly represented, and have fair play, in a court of justice; and that the laws of society should not present the monstrous inconsistency of making a surgeon punishable for the mal-treatment of a patient, and also punishable for resorting to the only means by which he can get information on surgical cases.

It is an egregious mistake to suppose that in a question of dissection, the interests of society are upon one side, and those of physicians on the other—for as dissections are actually only practised for the public good, the proper array of parties is to put upon one side the relatives and nearest friends of the deceased, and on the other, the community with its medical corps. The issue of a fair trial would then show the amount of damage sustained, and a suitable verdict would be rendered. We have but little doubt that the progress of the human mind, and the application of the principles of our benign religion, will ultimately put dissections upon this footing, and we should rejoice to see Massachusetts, the cradle of our political independence, also the cradle of our mental regeneration in this respect.

W. E. H.

XXV. *The Anatomy, Physiology, and Diseases of the Teeth.* By THOMAS BELL, F. R. S., F. L. S., F. S. S., Member of the Royal College of Surgeons in London, &c.; Lecturer on the Anatomy and Diseases of the Teeth at Guy's Hospital, and Surgeon-Dentist to that Institution. Carey & Lea, 1830. 8vo. pp. 351, plates XI.

On a former occasion we noticed some of the principal works on dentistry, and pointed out how much a complete treatise on this department, *au courant* with the present improved state of physiological, pathological, and therapeutical knowledge was wanted. This desideratum is indeed universally felt and acknowledged, and to furnish it—to correct the errors, and supply the deficiencies of other writers—to place in the hands of the student and of the medical practitioner, a plain and practical digest of the information at present possessed in the art—and to lay before them the result of the author's own investigations and experience, is the object of the author of the treatise, the title of which is at the head of this notice. In the accomplishment of his design, Mr. Bell has succeeded to a very creditable extent, his work being decidedly the best that has appeared, at least in our language. The author is not a mere compiler, but as we are informed, has been long distinguished as an able practical dentist and scientific lecturer on dental surgery, at one of the principal hospitals in London. His treatise is divided into two parts—the first is devoted to the anatomy and physiology of the teeth—the second to their diseases and treatment. The very nature of the work, renders it impossible to present an analysis of it within the limits of a notice like the present. We must therefore confine our-

selves to merely expressing in general terms our favourable opinion of the work, and acknowledging the pleasure and instruction that we have derived from its perusal.

XXVI. *Atlas Historique et Bibliographique de la Médecine composé de Tableaux sur l'Histoire de l'Anatomie, de l'Physiologie, de l'Hygiène, de la Médecine, de la Chirurgie et de l'Obstétrique, &c.* Par CASIMIR BROUSSAIS, Docteur en Médecine, Chirurgien Aide-Major du Gymnase Normal Militaire et Civile, Professeur Agrégé à la Faculté de Médecine de Paris, &c. &c. Paris, 1829. Folio, pp. 44.

This work consists of seven tables, the first devoted to the history of anatomy, the second to that of physiology, the third to hygiene, the fourth to medicine, the fifth to surgery, the sixth to obstetrics, and the seventh to a chronological coup d'oeil of all the epochs. The tables are arranged on the same plan as those in Lavoisne's Atlas, and exhibit at a single view the history of the science—its principal epochs—its progress in different countries—and the names of those who have cultivated it with most success, the period at which they flourished, the country in which they lived, and their principal discoveries or works. Joined to each of these tables, is a list, arranged alphabetically, of the authors of the principal works in the department to which the table is appropriated, with the title of their first work, and the period of its publication. Following these tables, there is a list of the principal universities and schools of medicine, with the date of their foundation—a catalogue of the editions of Hippocrates, Celsus, Erotien, Galen, Oribasis, and Avicenna, with the names of their translators—a list of the principal medical journals—and a catalogue of the chief works on the history of medicine.

Our limits will not permit us at present to discuss the value of a knowledge of the history of our science, or to point out the merits and faults of the work of M. Broussais. The former we regret the less, since it can hardly be suspected that any one of intelligence can doubt its importance; and as to the latter, we should have so much more to commend than to censure, that we are satisfied to pass over the faults, and recommend the work to the attention of the student. We must, however, remark that the American physician, in examining this work, will be disappointed in not finding any notice of many of those who have contributed most to the progress of medicine in this country, while he will learn for the first time, of the celebrity, probably the very names, of some of those quoted by M. Broussais.